# WebEye E10/E104 User's Guide

* This manual is for WebEye firmware version 1.2.0. If your WebEye has the later version of firmware, please download the last updated user's guide from WebGate's homepage (www.webgateinc.com)

## System Requirements

■ **For WebEye**

- Network: 10 Base-T LAN
  (Leased line, xDSL, Cable Modem, ISDN)

■ **For a PC to access WebEye**

- Processor: Pentium II and above
- RAM: 64MB and more
- OS: Windows 98/NT/2000
- Screen Resolution: 1024 X 768 pixels and above
- Network: 10 Base-T LAN or PSTN
- Web Browser: MS Internet Explorer 5.0 and above
  NS Navigator 4.7 and above

**WebGate Inc.**

## FCC Compliance Statement

**Caution** : Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE** : This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environmental. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at own expense.

### Warning

This is a class 'A' product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures

## Important Notice

1. WebEye is for indoor use. Therefore note that the CCD (charged coupled device) inside the product can be damaged permanently if the camera lens is exposed to direct sunlight. When you place WebEye under the glaring light, we recommend using an iris lens. If your application demands prolonged exposure to sunlight, you should consider to equip with a sun visor.

2. WebEye is not weatherproof. Therefore you should be well aware of environmental specifications that are included in the manual. In case of outdoor use, where it needs additional weather criteria, you should equip weatherproof case to protect WebEye from water, moisture, or temperature (higher or lower than specification). For WebEye cleaning, gently wipe with clean dry cloth.

3. Be sure to use a DC adapter that is provided by Web Gate Inc. Connecting WebEye directly to an AC current, may cause electric damages to WebEye.

4. Be caution in handling WebEye for physical shocks may harm the product.

5. WebEye E104 is made of aluminum. Therefore you can hurt human beings if you throw it to them or hit on them. When installing WebEye, be sure it is attached tight and stable to avoid any human injures. Be cautious to locate on safe places where children are unreachable.

6. If WebEye does not operate properly, please contact the closest local WebGate distributor for after sales service. In all cases, you are prohibited to disassemble the product. If so, WebGate is not responsible for any malfunction nor service warranty.

7. Camera surveillance laws may dffer for each country. Therefore, please contact the local region first to avoid any surveillance law violations and to apply for authorized purposes only.

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# I. Introduction

- **What is WebEye?**

  The WebEye is a camera server with an integrated Internet server, image compression device, built in CCD, flash memory, and many other features. No other hardware is necessary for use. The WebEye connects directly to a network and provides real time images over networks and the Internet. Simply provide power and connect LAN cable to the WebEye. WebEye utilizes Wavelet image compression and Linux operating system. Wavelet and Linux enable WebEye to transfer high quality images faster and with a greater degree of reliability than standard JPEG systems.

- **Features and Benefits**

  **Ease of Use –** WebEye requires either Netscape Navigator 4.7 (or higher) or Microsoft Internet Explorer 5.0 (or higher) for use. Windows 2000 is recommended for best results. Connect WebEye to the Internet and it is ready for use.

  **Compatible with most Systems and Protocols –** WebEye supports TCP/IP networking, SMTP, HTTP and other Internet-related protocols. In addition, the WebEye can be used in mixed operating system environments, such as Windows, UNIX, Macintosh and OS/2. WebEye also integrates easily into other Internet/Intranet applications and CGI scripts.

  **Simple Administration -** WebEye can be configured and managed directly from its own web page. Moreover, as new upgrades become available, it is easy to upgrade all WebEye camera products remotely over the network.

  **Wavelet Image Format -** Unlike many other products that need to fracture image files prior to broadcast, the WebEye delivers complete, highly compressed pictures in Wavelet format. Wavelet has image compression rates 30-300% higher than standard JPEG. By utilizing Wavelet, image file sizes are much smaller than conventional camera servers and Wavelet's image quality is superior to other camera servers as well. Wavelet can transmit up to 123 frames per second.

  **External Device Connection -** External devices such as IR-sensors, switches, alarm relays and external video input can be connected to WebEye via the auxiliary Input/Output port.

  **User's Programmable Space –** WebEye contains 4.5MB of configurable Flash Memory for user-programmable and user-configurable space. Because WebEye also acts as a server, this space can be used to create a personal web page.

  **Embedded Linux Operating System –** WebEye uses an embedded Linux operating system within its 32bit RISC CPU. Linux is based on UNIX and is one of the most stable operating systems available. There is very little chance of the operating system crashing.

# II. Product Description

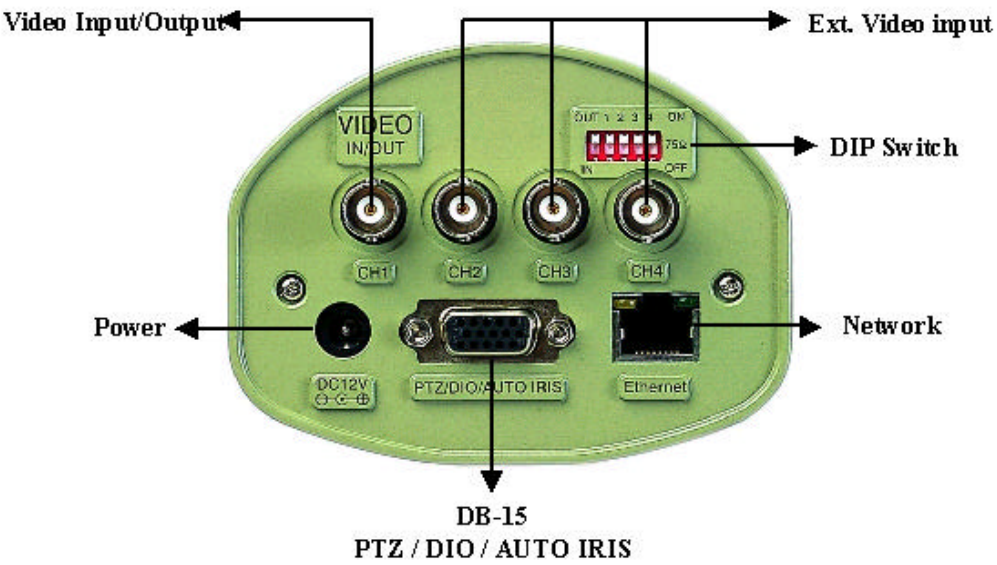
## 1. WebEye E104

### 1) Contents

* Unpack and check all the items as below.

| Item | Description | Remarks |
|---|---|---|
| WebEye | Web server camera | |
| AC Adapter & Power cable | DC 12V, 1A | |
| Lens | 8mm, f 1.3, C mount | Already assembled |
| Manual | WebEye User's Guide<br>Quick reference guide | Provided on CD<br>Printed material |
| Crossover Cable | 1 m crossover cable | Red-colored |
| Direct Cable | 2 m direct cable | White-colored |
| Plug & Holder | Plug & holder for DB-15 | |
| Wrench | L-shaped hexagonal wrench | WebEye E104 only |
| CD ROM title | Setup program and manual | |

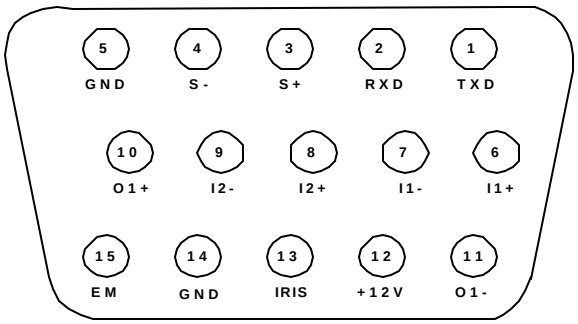
### 2) Rear View and Descriptions




| Connector Name | Description | Remark |
|---|---|---|
| DIP switch | To configure the function of 'CH1 BNC connector' and to designate video signal termination of all four BNC connectors. | |
| CH1 BNC connector | To output or input video signal through a coaxial cable. | |
| CH2 BNC connector | To input video signal through a coaxial cable. | |
| CH3 BNC connector | To input video signal through a coaxial cable. | |

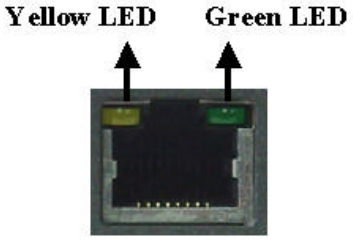
| | | |
|---|---|---|
| CH4 BNC connector | To input video signal through a coaxial cable. | |
| Power connector | To supply power connecting provided SMPS power supply unit (12V 1.0A) | |
| DB-15 port | To connect external devices such as pan/tilt/zoom mechanism, sensor, video iris lens, digital device, etc. | |
| RJ-45 Ethernet port | To connect 10 Base-T Ethernet cable. | |

**3) Descriptions on DB-15 port**




| Pin No. | Pin Name | Description |
|---|---|---|
| 1, 2 | TXD, RXD | To communicate between external devices such as PTZ controller and WebEye E104. These pins are for devices that satisfy RS-232 standard. |
| 3, 4 | S+, S- | To communicate between WebEye E104 and external devices that satisfies RS-485 standard. They are half-duflex. The ports are used to connect several PTZ controllers. |
| 5, 14 | GND | To ground cables of power, communication, IRIS, etc. |
| 6, 7 | I1+, I1- | To connect external devices such as infrared sensors. |
| 8, 9 | I2+, I2- | To connect external devices such as infrared sensors. |
| 10, 11 | O1+, O1- | To control external electric device. They are 1 pair of SSR (Solid State Relay) output ports. |
| 12 | +12V | To supply power to external devices such as an auto iris driver or a sensor. |
| 13 | IRIS | To transmit video iris signal from WebEye E104 to auto iris lens. |
| 15 | EM | To maintain firmware of WebEye E104. |

**4) Description on LED of Ethernet Port**




**Yellow LED**: This LED indicates the status of data transmission. After power is supplied, it is on for the first 4-5 seconds and then it goes off. And it blinks continuously when a user access WebEye and WebEye transmits data.

**Green LED**: This LED indicates the status of networking. After power is supplied, it is on for the first 1-2 seconds, and then it blinks once at every one second as long as the network is connected.

## Phenomenon of Malfunction

**1. Network Malfunction**

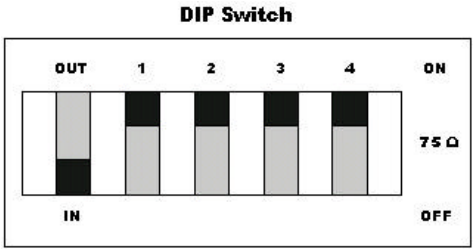
- Green LED blinks once at every 4 seconds
- Check if Ethernet cable is connected properly or the Network works.

**2. Software Malfunction**

- Green and yellow LEDs are on, and they blink 6 times rapidly at every 10 seconds.
- This problem is to be solved with A/S program. Contact the dealer from who you bought WebEye.

- After being on for a second, Green and yellow LEDs blink 6 times rapidly. Then green LED is on and yellow LED is off.
- This problem is to be solved by re-installing firmware. Visit WebGate's Internet homepage to download the firmware and install it on your WebEye.

### 5) Descriptions on DIP Switches




- **OUT / IN**

To configure the function of the first coaxial cable port at the rear of WebEye.

If you set the switch at position 'OUT', the first port can be used to transmit video signal from WebEye's inner CCD module to outer displayer such as TV or computer monitor. Setting the first DIP switch at 'OUT' and the second DIP switch at 'OFF', you can connect an outer displayer directly to the first port with coaxial cable. In this case, you may monitor 4 channels (Ch.0, Ch.2, Ch3, and Ch.4) in WebEye's Homepage through network and also can monitor a channel (Ch.0) on outer displayer with motion pictures sent from WebEye's inner CCD module. It means that WebEye could not receive video signal from an external camera, connected to the first coaxial cable port, though.

If you set the switch at position 'IN', the first port can be used to receive video signal from external CCD camera. Setting the first DIP switch at 'IN' and the second DIP switch at 'ON', you can

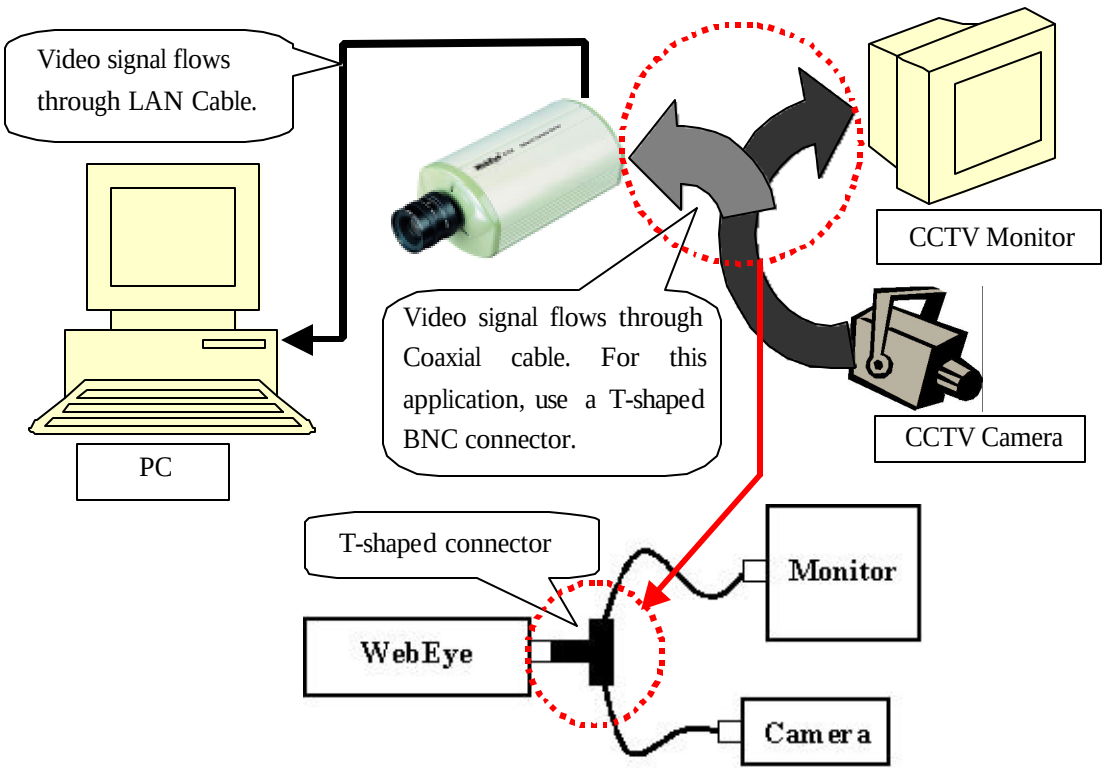
connect an external CCD camera directly to the first port with coaxial cable. In this case, you may select and monitor 2 types of 4-channel video sources. The first one is of Ch.0, Ch.2, Ch.3, and Ch.4, and the other is of Ch.1, Ch.2, Ch.3, and Ch.4. Difference is Ch.0 that shows video signals from an inner CCD of WebEye, and Ch.1. that shows video signals from an external CCD camera. You can select which channel to use through 'WebEye Setup Program' or 'Configuring Administrator's Condition at Homepage' (Refer to Chapter V and VII)

- **ON / OFF**

To designate video signal termination. This is for expanded usage. If you want to connect external CCD camera to CCTV monitoring system as well as WebEye, you can use T-type coaxial cable jack. In this case, you should decide which one is terminal of video signal. WebEye is not affected if the CCTV system is designated as terminal. However, CCTV system is affected if the WebEye is designated as terminal. CCTV monitor will show vague image if it is not designated as terminal.

If you want to connect 4 external cameras to coaxial cable ports of WebEye and CCTV system at the same time, you use T-type coaxial cable jack to WebEye's coaxial cable port. In this case, you should place 4 switches of 1, 2, 3, and 4 at the position of 'OFF'. T-type jack has 3 ports to connect coaxial cables from WebEye, an external CCD camera, and CCTV system.

If you want to connect 4 external cameras only to WebEye, you should place the switches at 'ON'



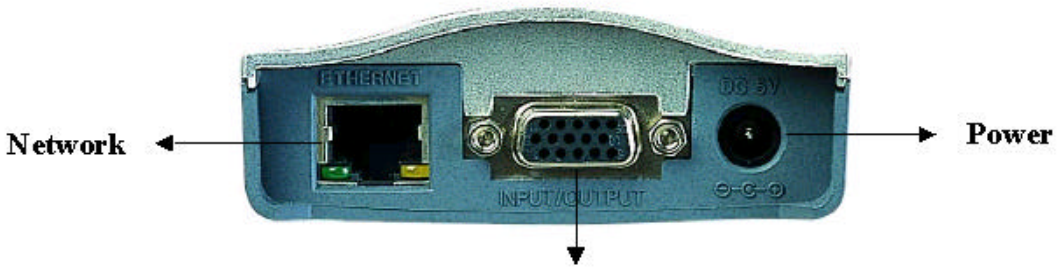
## 2. WebEye E10

### 1) Contents

* Unpack and check all the items as below.

| Item | Description | Remarks |
|---|---|---|
| WebEye | Web server camera | |
| AC Adapter & Power cable | DC 5V, 1.5A | |
| Lens | 3.8mm, f 2.0, fixed | Already assembled |
| Manual | WebEye User's Guide<br>Quick reference guide | Provided on CD<br>Printed material |
| Crossover Cable | 1 m crossover cable | Red-colored |
| Direct Cable | 2 m direct cable | White-colored |
| Plug & Holder | Plug & holder for DB-15 | |
| Stand | Stand for WebEye E10 | WebEye E10 only |
| CD ROM title | Setup program and manual | |

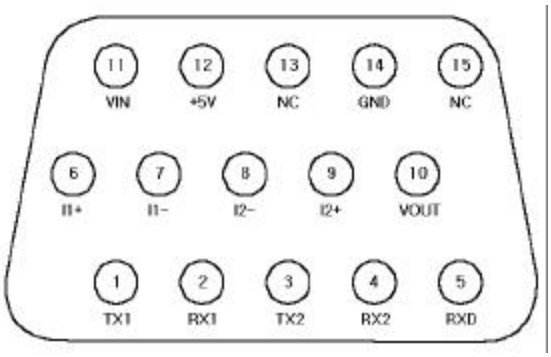
### 2) Rear View and Descriptions




**PTZ / DI / Video In & Out**

| Connector Name | Description | Remark |
|---|---|---|
| Power connector | To supply power connecting provided SMPS power supply unit (5V 1.5A) | |
| DB-15 port | To connect external devices such as external camera, pan/tilt/zoom mechanism, sensor, digital device, etc. | |
| RJ-45 Ethernet port | To connect 10 Base-T Ethernet cable. | |

**3) Descriptions on DB-15 port**




| Pin No. | Pin Name | Description |
|---|---|---|
| 1, 2 | TX, RX | To communicate between external devices such as PTZ controller and WebEye E10. These pins are for devices that satisfy RS-232 standard. |
| 3, 4 | TX, RX | To communicate between external devices such as PTZ controller and WebEye E10. These pins are for devices that satisfy RS-232 standard. |
| 5, 14 | GND | To ground cables of power, communication, IRIS, etc. |
| 6, 7 | I1+, I1- | To connect external devices such as infrared sensors. |
| 8, 9 | I2+, I2- | To connect external devices such as infrared sensors. |
| 10 | VOUT | To connect a CCTV monitor directly to WebEye E10. |
| 11 | VIN | To connect an external camera. |
| 12 | +5V | To supply power to external devices such a sensor. |
| 13, 15 | NC | No function pins. |

**4) Description on LED of Ethernet Port**

Please refer to WebEye E104.

## III. WebEye Installation Summary, Connection & Placing

### 1. Installation Summary

- Connect Ethernet and Power to WebEye on local network for configuration
- Install a setup program for WebEye in to a PC on local network
- Assign an IP address to WebEye and configure administrator's condition
- Configure user's condition
- Place WebEye for your purpose, and re-connect power and Ethernet
- Adjust the Focus

### 2. Connecting

- Connect Ethernet line to the Ethernet port in the rear.
- Connect the power supply to a power supply port in the rear.
- Confirm that the LED of the Ethernet port blinks

### 3. Placing

- Place WebEye appropriately for your purpose

* Use a general camera stand or tripod for WebEye.

**Warning**

WebEye is for indoor use. The built in CCD (charged coupled device) can be damaged permanently if the camera lens is exposed to direct sunlight. When the WebEye is placed under glaring light, an iris lens is recommended.

If your application demands prolonged exposure to sunlight, consider using a sun visor.

## IV. Installing WebEye Setup Program

- Insert the WebEye Setup disk.
- Drag the WebEye Setup icon onto the desktop.
- Double-click on the icon.

## V. Assigning IP Address and Configuring Administrator's Condition

**Important**

**To access WebEye, you firstly have to assign an appropriate IP address. When you assign an IP address to WebEye, make sure to use unoccupied IP address, and not to use the default or example IP address.**

### Terminology

**IP Address**

IP address is an identification code for computers and devices on a TCP/IP network. Networks using TCP/IP protocol route messages based on the IP address of the destination. Within a closed network, IP addresses can be assigned at random as long as each one is unique. However, connecting a private network to the Internet requires using registered IP addresses to avoid duplicates. IP address can be acquired from a network administrator or an Internet service provider.

**MAC Address (Media Access Control Address)**

MAC address is a hardware identification code that uniquely identifies each node of a network. The MAC layer interfaces directly with the network media. Consequently, each type of network media requires a different MAC layer. The MAC address of WebEye is a 12-digit number. A unique MAC address can be found on the label at the bottom of each WebEye.

**Crossover Cable**

The crossover cable (red) provided with the WebEye is used to connect the WebEye with a PC. A HUB is not necessary to connect the WebEye to a PC if a crossover cable is used.

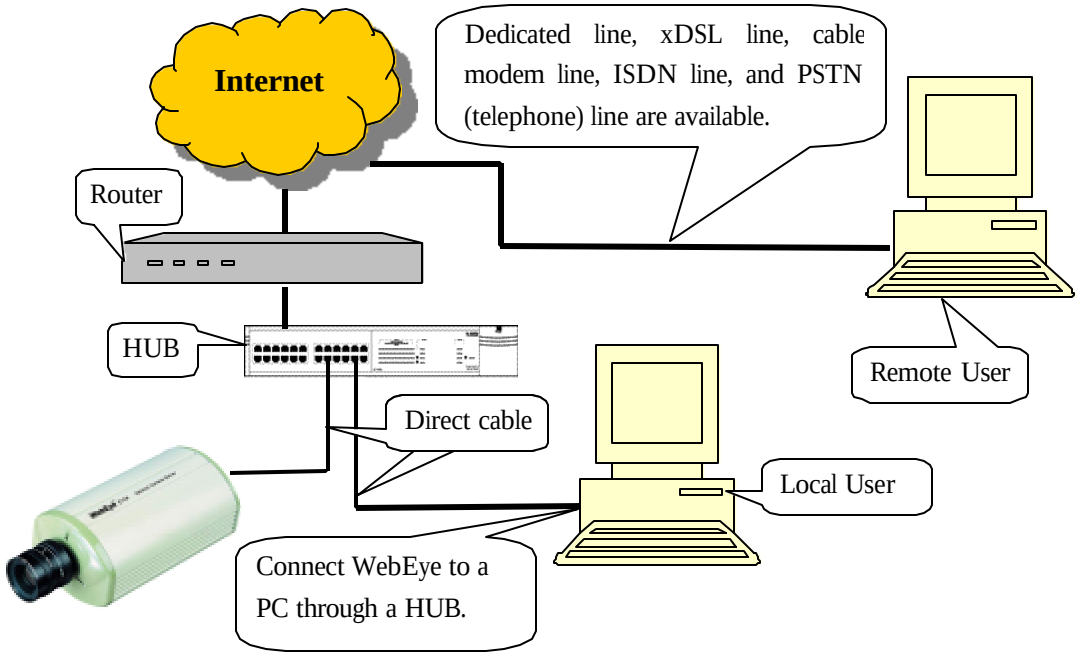
**Direct Cable**

The direct cable (white) should be used if a HUB is used as an intermediary between the WebEye and PC.

## 1. Connecting WebEye to a PC

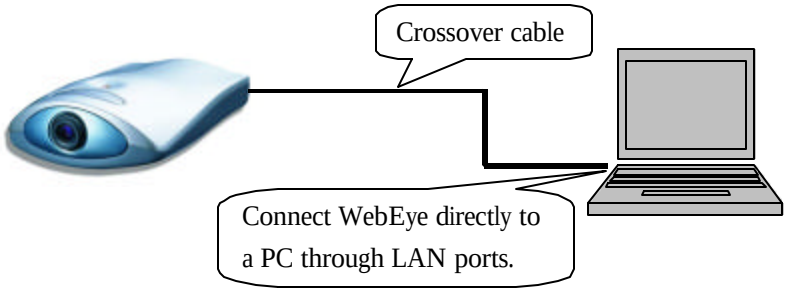
### 1) Connecting WebEye on Internet or LAN.

You may use direct cable (white colored one) to connect WebEye E10/E104 on Internet or LAN. With this connection remote user may not access WebEye before local user configure its network setting.


Internet
Dedicated line, xDSL line, cable modem line, ISDN line, and PSTN (telephone) line are available.
Router
HUB
Remote User
Direct cable
Local User
Connect WebEye to a PC through a HUB.

### 2) Connecting WebEye to a PC.

Use the crossover cable (red colored one) to directly connect WebEye E10/E104 to a PC. This connection is to be used to configure WebEye.



## IP Address Assigning Methods

■ With setup program

- Assemble and place WebEye
- Assign IP address to WebEye using setup program on local network.
- Access WebEye through Web browser with the IP address and configure user's condition and administrator's condition.
- If it is impossible to assign IP address with setup program, try it with ARP command

■ With ARP command

- Assemble and place WebEye
- Assign IP address using ARP command on local network
- Access WebEye through Web browser with the IP address and configure user's condition and administrator's condition.

## 2. Assigning IP address and Configuring administrator's condition with Setup program

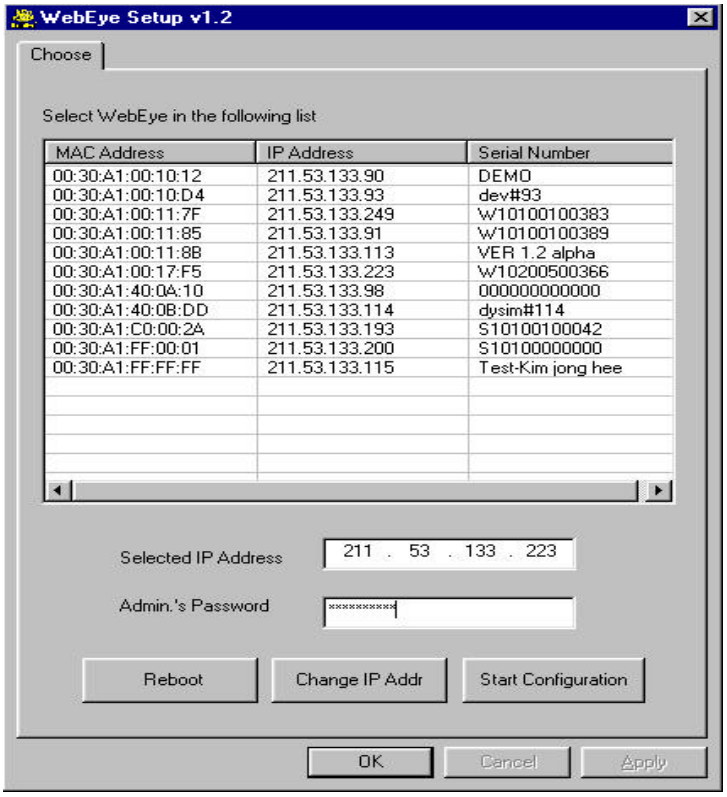
### 1) Starting Setup Program for WebEye

Click the "WebEyeSetup.exe" file on your PC. When the Setup Program is executed, the setup program detects and shows every WebEye connected on the local network.

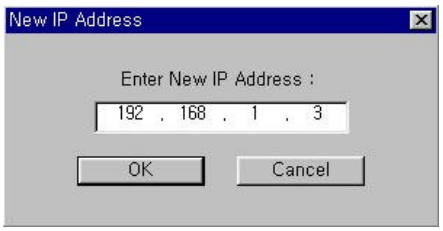
From the WebEyes listed, select one to assign a new IP address. (Default is 211.53.133.92).To choose a WebEye, click on its MAC Address or IP addres

When a WebEye is selected, its IP address will appear in the 'Selected IP Address' box. Type a password in the "Admin's Password" box to change the IP address, reboot WebEye, or start configuration.

The default password is "admin".



To change the IP address, enter the Admin's password and click "Change IP Addr." Enter the new IP address and click "OK."




The "Reboot" button will reboot the WebEye. This process takes 10-20 seconds.

**2) Configuring Administrator's Conditions**

To access the WebEye's Administrator's Page from the Setup Menu, enter the admin.'s password and click the "Start Configuration" button. (For more detailed information, refer to Chapter VII "Configuring Administrator's Condition at Homepage")

## 3. Assigning IP Address with ARP command

### 1) Using ARP in Windows98 and NT

When using WebEye with Windows 98 and Windows NT, follow the steps below.

- Open a DOS window and type the following commands.

```
Arp  -s  <WebEye IP address>  <WebEye Ethernet address>
Ping  -t  <WebEye IP address>
```

- Example

```
Arp  -s  192.168.1.3  00-40-8c-10-00-86
Ping  -t  192.168.1.3
```

### 2) Using ARP in Windows 95

When using WebEye with Windows 95, follow the steps below.

- Open a DOS window and type the following commands.

```
Arp  -s  <WebEyeIP add.>  <WebEye Ethernet add.>  <my PC IP add.>
Ping  <WebEye IP address>
```

- Example

```
Arp  -s  192.168.1.3  00-40-8c-10-00-86  192.168.1.2
Ping  192.168.1.3
```

### 3) Verifying Installation

After successfully completing the above procedures, the following message (or similar) will appear on the screen:

```
Request timed out
:
Request timed out
Reply from 200.243.232.178: bytes=32 time=2ms TTL=255
Reply from 200.243.232.178: bytes=32 time=2ms TTL=255

Ping statistics for 200.243.232.178:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milliseconds:
    Minimum = 1ms, Maximum = 2ms, Average = 1ms
```

If the above "ping" reply does not appear, press 'F3' and 'Enter' keys. Normally "Request timed out" messages appear 7 times before replying properly.

Once the above "ping" reply appears press <Ctrl>+<C> keys to make it stop.

When the "ping" reply stops, data loss may range from 0% to 99%. This is normal. If the statistic shows '100% loss', check the following criterions: (a) network line and connection status are stable; (b) IP address assigned to WebEye is available; (c) PC and WebEye have the same local network IP address. Same local IP address of C grade network means that first 3 sets of numbers are the same but the fourth set is different. For example 192.168.1.2 and 192.168.1.3 are in the same local network. (If there is a 'Network Mask' on the network, this can be an exception. For detailed information on IP, refer to appendix 4)

# VI. Accessing WebEye Homepage & Monitoring Real-time Image

*After assigning WebEye an IP address, you may access WebEye and monitor real-time image on Internet. However you may not access its Homepage on remote network until assigning other addressees like gateway address, subnet mask, broadcast address properly.*

## 1. Starting Web browser

Start your web browser and enter your WebEye IP address. Then you can see a build-in homepage of WebEye.

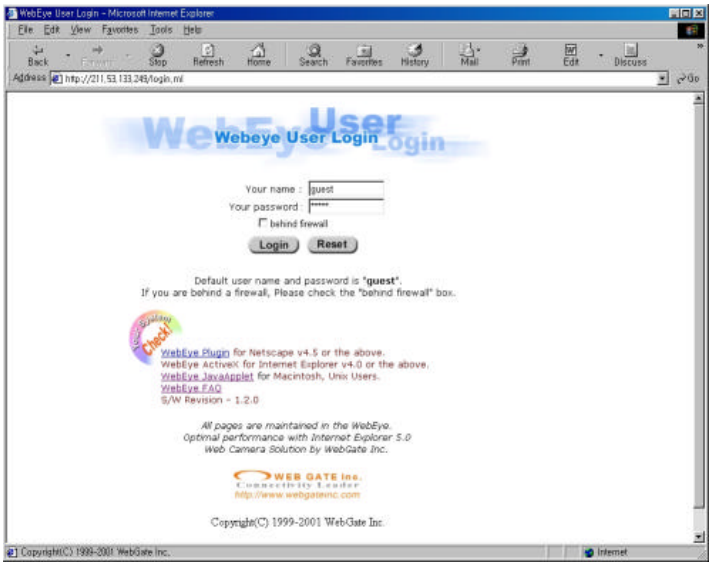
- Example

| |
|---|
| http://200.243.232.178/ |

WebEye supports up to 100 users simultaneously. If a person tries to access WebEye as the 101st user, one cannot receive any image but will see a message of user counter on upper right side of homepage as 'Connected Client#: 100'

## 2. Login page

### 1) ID and password


WebEye User Login - Microsoft Internet Explorer
Webeye User Login
Your name :
guest
Your password :
behind firewall
Login
Reset
Default user name and password is "guest".
If you are behind a firewall, Please check the "behind firewall" box.
WebEye Plugin for Netscape v4.5 or the above.
WebEye ActiveX for Internet Explorer v4.0 or the above.
WebEye JavaApplet for Macintosh, Unix Users.
WebEye FAQ
S/W Revision - 1.2.0
All pages are maintained in the WebEye.
Optimal performance with Internet Explorer 5.0
Web Camera Solution by WebGate Inc.
WEB GATE Inc.
Copyright(C) 1999-2001 WebGate Inc.

To verify registered WebEye users, there is a Login page. If you are to connect to WebEye, you should follow login procedures.

If you key in user's ID and password, you may access to a viewer to monitor real-time images. With administrator's ID and password, you may also access to a real-time image viewer with administrator's authority.

The default value of both user's ID and password are '**guest**', and administrator may change it at Admin page. But, each ID and password must be composed within 9 bytes. (e.g. 9 English letters)

### 2) Behind Firewall

If your PC is connected on a network where firewall is. In the case, you may not view real time image properly because video TCP port of WebEye is blocked. Common video TCP port (A default video TCP port of WebEye is 8080th port.) is blocked under firewall. If you are under firewall, you

may view real time image through WebEye's Server Push Viewer that transmits video through Web TCP port instead of video TCP port.

By clicking on 'Behind Firewall' menu, you may directly connect Server Push Viewer when you access WebEye homepage.

**3) WebEye Plug-in for Netscape user**

To monitor real-time image through Netscape Navigator, user should install WebEye Plug-in program first by clicking WebEye Plug-in menu. When you connect WebEye for the first time or you have Plug-in program of lower version, you have to download it clicking 'Download WebEye Plug In Now!' button. Then you click 'Grant' and 'Install' buttons respectively. When you access WebEye with lower version, you may not monitor properly. In the case, download and install Plug-in program again.

**4) WebEye Active-X for MS Explorer User**

For a Microsoft Explorer User, Active-X Control program is required. The program will be installed automatically when a user accesses to WebEye. For Active-X installation on your PC, just click 'Yes' to the question if you want to install the program on pop-up window. If you cannot see images after installation, you should check if Active-X Control program (a file named Web Camera Server Control) is installed or not. You may check Web Camera Server Control file (Active-X Control program) in the fold of C:\Windows\Download Program Files. If the Web Camera Server Control file is not installed at all in the directory, try it again to download and install it. If the file is already installed but image is not seen, remove the file and re-install it.

**Plug-in and Active-X Installation**

If the Plug-in or Active-X program fails to be installed automatically, you may install it manually. The manual installation program is provided at 'Client Support' page in WebGate's Internet homepage. (http://www.webgateinc.com)

The installation will not take more than 1 minute. Please, don't click any button until the installation is completed.

**5) WebEye Java Applet for Macintosh or Unix system user.**

Java applet viewer is for a user who accesses WebEye through a computer that dose not utilize MS Windows (OS) such as Macintosh computer, etc. Java applet viewer is run with java virtual machine that is installed on User's computer.

**6) FAQ**

A lot of questions and answers are provided here for troubleshooting. If user has another question that is not answered here, please contact WebGate through its Internet homepage.

**Macintosh and Unix System**

WebEye Active-X and Plug-in program is based on MS Windows OS. Therefore it is impossible to access WebEye and monitor real time image through default viewer. If a user access WebEye through Macintosh or Unix systems, WebEye detects that OS is not MS Windows. And it operates java based image viewer to show real time image. The design is same to default viewer, b ut some functions are not work for now.

If you have any problem in monitoring real time image, please refer to FAQ for troubleshooting. The document is provided at 'Client Support' page in WebGate's Internet homepage. (http://www.webgateinc.com)

## 3. Various viewers in WebEye homepage

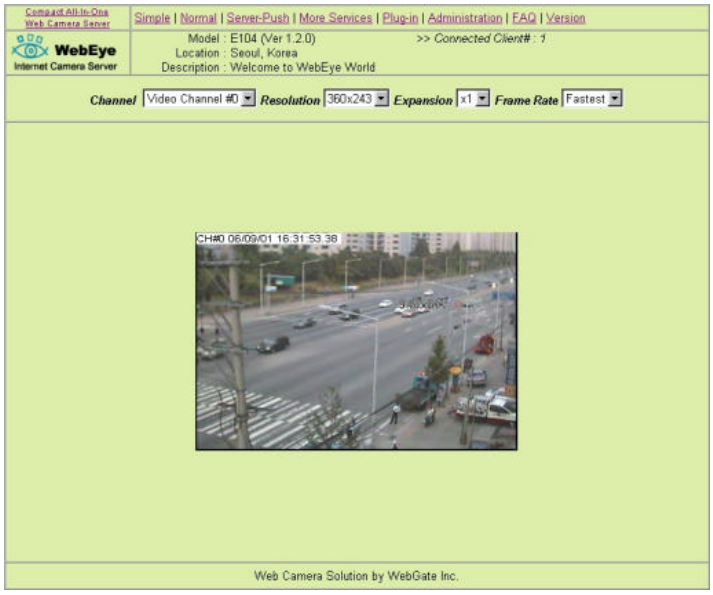
There are 6 viewers of real-time monitoring in WebEye homepage. An administrator may set 3 different viewers as a main viewer out of the 6 viewers. User may monitor real-time images through a viewer that is set as a main by administrator.

6 viewers are default viewer, normal viewer, simple viewer, server-push viewer, java applet viewer, and snapshot viewer. And an administrator may select a default viewer, a normal viewer, or a simple viewer as a main viewer

### 1) Real-time monitoring through default viewer

At default viewer, user may also choose a viewer among all 6 viewers. Therefore general user may use a certain viewer for one's convenience.

Especially, this default viewer is designed of HTML and server-side script, so administrator may change page easily.




**(1) Real-time monitoring.**

User monitors real-time images clicking 'here' menu after setting channel, resolution, expansion, and frame rate.

**Channel selection**

It is to select channels to monitor. User may select a certain channel or all 4 channels (WebEye E10: between 2 channels).

**Resolution**

User may select a level of resolution among 5 levels (720x486, 720x243, 360x243, 180x121, 90x60). High-resolution image is big, and it is transmitted at slow speed.

**Expansion**

User sees image in different sizes from 1X to 4X. However, Expansion (2X to 4X) does not increase image's resolution, but rather enlarges its size. Therefore, the quality of extended image is not as clear as original one.

**Frame rate**

User chooses image transmission speed. If you choose 'Fastest', you can get images at fastest speed under your network environment. The transmission speed depends much on network line's capacity and user PC's performance. WebEye transmits maximum 30 frames per second, and total frames transmitted by all 4 channels cannot surpass the maximum rate of 30 fps.

**(2) Changing with other image viewers**

User may monitor real-time image through other viewers such as simple viewer, normal viewer, server-push viewer, java applet viewer, and snapshot viewer.

**Normal viewer and simple viewer**

User can utilize various functions of pan/tilt/zoom control, gray-image transmission mode, progressive transmission mode, etc. And simple viewer is designed very simple compared to normal viewer, so the viewer is recommended to a user who uses low speed network line.

**Server push viewer**

If user's PC is connected on network where a firewall is, the user may view real time image through server push viewer. If you access server push viewer, real time images are transmitted through Web TCP port. So images are to be transmitted at lower frame rate than that of simple viewer or normal viewer. You may utilize almost the same functions that of normal viewer or simple viewer.

**More service**

Clicking others menu, user may see explanation on normal, simple, server-push, java applet, and snap shot viewers. Java applet viewer is for a user who accesses WebEye through a computer that does not utilize MS Windows OS such as Macintosh computer, etc. And snapshot viewer is to see still image beforehand accessing WebEye homepage.

**(3) Accessing administration page**

Clicking 'Administration' menu, you go to a login page of administration page. However only the user who has authority as an administrator can access the page with administrator's ID and password.

**(4) Plugin**

As WebEye compresses image with Wavelet algorithm, user need to install Plug-in program from WebEye to see transmitted image on Netscape Navigator on one's PC. Clicking 'Plugin' menu, a user accesses a page where to download Plug-in program.

**(5) FAQ**

User may refer FAQ for trouble-shooting in installing or running WebEye.

**(6) Version**

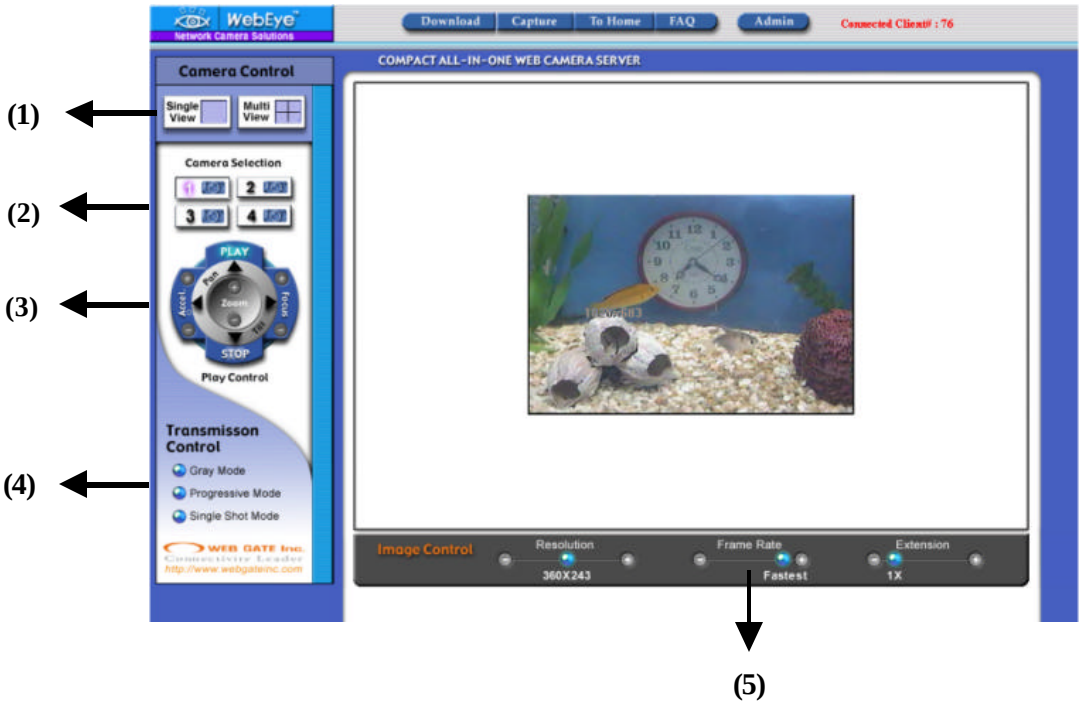
User may look up information on software versions clicking.

**(7) Placing a company logo and hyper-linking**

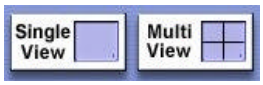
WebGate company logo, which is located on the left top in the viewer, can be replace with user's company logo. User designates one's company homepage to be connected through a hyper-link on the logo. (Refer to Chapter VII for detailed information)

**2) Real-time monitoring through normal viewer**

After Login, user sees real-time images with various menu buttons to configure monitoring conditions for user's convenience.



**(1) Single View / Multi View**




In case that you connect external CCTV cameras, you can see 4 screens of real-time images at the same time. (2 screens with WebEye E10). For view selections, click on the appropriate button for single view or multi view.

**(2) Camera Selection**

If you connect CCTV cameras to the external video ports in your WebEye, you can select and see each real-time image with these camera selection buttons.

**(3) Play Control**

**Pan/Tilt**

If you click the buttons, you can move the direction of WebEye to where you want to see.

**4 direction arrows**

You may change direction right/left and up/down.

**Zoom**

You may zoom in and zoom out.

**Focus**

You may control and optimize the image's focus.

**Accel**.

You may choose moving speed of Pan / Tilt mechanism with 'Accel+ or -' buttons among three steps. The step selected is shown as graphic beside the 'Accel' text. However you cannot control zooming speed with these buttons. You may set zooming speed with your mouse. By clicking the right button, a pop-up window of 5 menus appears. Among them, you may do the setting with 'Focus Sensitivity' menu. You can select a certain level among ten.

**PLAY/STOP**

WebEye generates and transfers the real-time images as soon as you access it. If you want to stop transferring images to your PC, click the STOP button. And click 'PLAY' button to resume.

**(4) Transmission Control**

**Gray Mode**

If you choose this mode, the images are displayed in black and white. And, you can view the images transmitted faster.

**Progressive Mode**

In the case of 'Progressive Mode' on, every image is regenerated from

low to high resolution. In other words, an image is reproduced from vague to clear for user see what is happening and later one may detect exact things. This function is useful when you use a low speed network, because it reduces waiting time.

**Single Shot Mode**

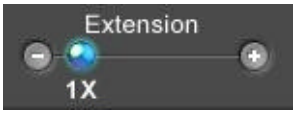
When this button is clicked, one frame of image is reproduced. Therefore, no other images may be viewed. To go back to the real-time images, click the button again

**(5) Image Control**

**Resolution**

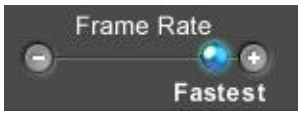
You may choose a certain resolution among levels. If you choose lower resolution rate, you can see image faster.

**Extension**




You may see images in different sizes 1X to 4X. However, Extension (2X to 4X) does not increase image's resolution, but rather enlarges its size. Therefore, the quality of extended image is not as clear as original image.

**Frame Rate**




You may choose image transmission speed. If you choose 'Fastest', you can get images at fastest speed. The transmission speed depends much on your network line's capacity and PC's performance.

**(6) Other function buttons**

**Download**

This button leads to a page where to download updated Netscape Plug-in program of WebEye.

**Capture**

This is to save a frame of still image that is transmitted from WebEye. A still image can be saved as a format of bitmap (*.bmp) or Wavelet method file (*.eye). Wavelet compression image file can be decompressed and reproduced on Internet browsers such as Netscape or Explorer. There is another method to capture a still image. After placing your mouse on the picture, click the right button of your mouse. Then a fly box appears. Then click 'Save As File'

**To Home**

This button is to return to a default viewer.

**FAQ**

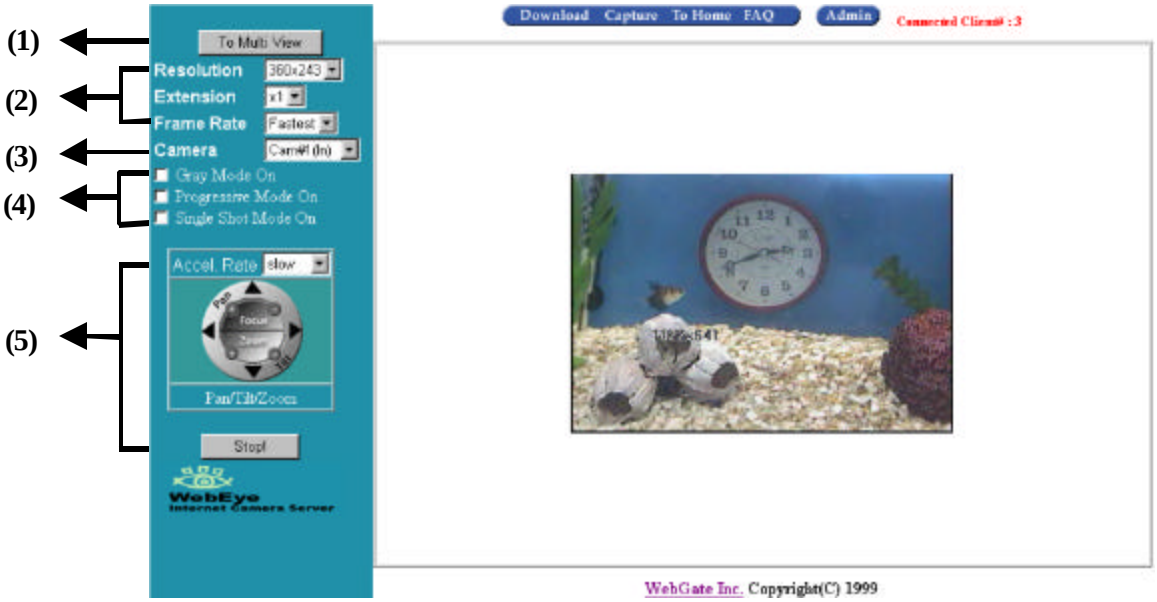
If user has any problem to install and run WebEye, one can find a solution with this button.

**Admin**

This button is to access administration page. (Refer to Chapter VII 'Configuring Administrator's Configuration at Homepage')

**3) Real-time monitoring through simple viewer**

Simple viewer has the same functional menus as normal viewer does. Simple viewer is designed very simple graphics so that its size is decreased dramatically to overcome low speed transmission.




**(1) Single View / Multi View**

User may select a mode between single view and multi view. The button is toggled between the two functions. Usages are same as normal viewer. Please refer to descriptions on normal viewer.

**(2) Image Control**

Usages are same as normal viewer. Please refer to descriptions on normal viewer.

**(3) Camera Selection**

Usages are same as normal viewer. Please refer to descriptions on normal viewer.

**(4) Transmission Control**

Usages are same as normal viewer. Please refer to descriptions on normal viewer.

**(5) Play Control**

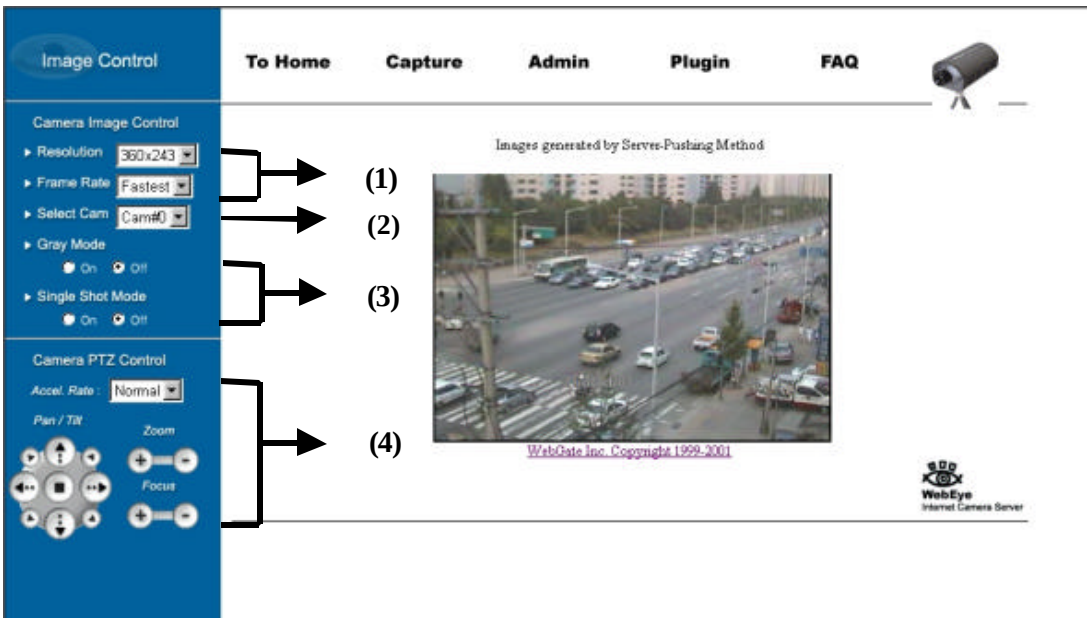
Usages are same as normal viewer. Please refer to descriptions on normal viewer. Play and Stop functions are toggled on the same button.

**(6) Other function buttons**

Usages are same as normal viewer. Please refer to descriptions on normal viewer.

**4) Real-time monitoring through server-push viewer**

If WebEye is installed on a network where firewall is, you may access WebEye through server-push viewer to monitor real-time images. If you have information on the network such as which port is block with firewall, you may access with default/normal/simple viewer by changing Web TCP port or video TCP port. For changing TCP port, please refer to Chapter VII 'Configuring Administrator's Configuration at Homepage'.




**(1) Image Control**

On server-push viewer, there is not 'Image extension' menu. Other usages are same as normal viewer. Please refer to descriptions on normal viewer.

**(2) Camera Selection**

On this viewer, there is not 'Multi Viewer' menu. Other usages are same as normal viewer. Please refer to descriptions on normal viewer.

**(3) Transmission Control**

On this viewer, there is not 'Progressive Mode' menu. Other usages are same as normal viewer. Please refer to descriptions on normal viewer.

**(4) Play Control**

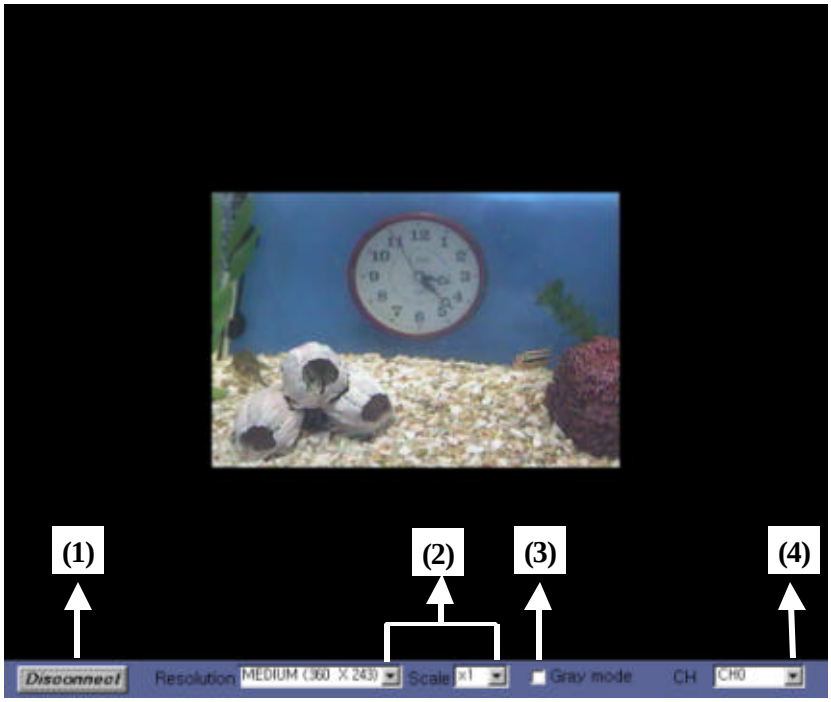
This is to control PTZ mechanism. Usages are same as normal viewer. Please refer to descriptions on normal viewer.

**(5) Other function buttons**

Usages are same as normal viewer. Please refer to descriptions on normal viewer.

**5) Real-time monitoring through java applet viewer**

Java applet viewer is for the users who access WebEye through a computer that dose not utilize MS Windows OS such as Macintosh computer, etc. Java applet viewer is run with java virtual machine that is installed on User's computer.




**(1) Connect/Disconnect**

After defining other conditions such as image control and transmission control, user monitors real-time images clicking 'Connect' button. This button is toggled to 'Disconnect' when a user accesses WebEye.

**(2) Image Control**

On this viewer, there is not 'Frame Rate' control menu. Other usages are same as normal viewer. Please refer to descriptions on normal viewer.

**(3) Transmission Control**

On this viewer, there is only a 'Gary Mode'. The usage is same as normal viewer. Please refer to descriptions on normal viewer.

**(4) Camera Selection**

On java applet viewer, there is not 'Multi Viewer' menu. Other usages are same as normal viewer. Please refer to descriptions on normal viewer. 'CH 0' is for internal camera and 'CH 1' is for external camera that is connected to 'CH 1' in the rear of WebEye E104. For WebEye E10, Ch1 is

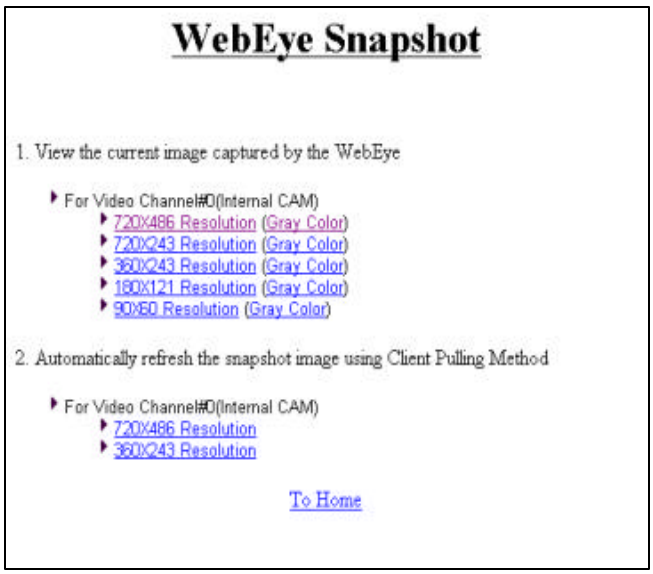
for the camera that is connected to video input. Therefore 'CH 1' screen can be seen when external camera is connected to WebEye.

**6) Real-time monitoring through snapshot viewer**

Snapshot viewer is to see still image and check the situation without monitoring real-time motion pictures through other viewers.

With default source, a user sees snap shot image from internal CCD (Ch0). And user may view image from other channel by changing its source.

There are two methods of snapshots. One is to see a single image fixed, and the other is updating image in every 3 seconds. A user may also differ updating period by changing its source.


WebEye Snapshot
1. View the current image captured by the WebEye
For Video Channel#0(Internal CAM)
720X486 Resolution (Gray Color)
720X243 Resolution (Gray Color)
360X243 Resolution (Gray Color)
180X121 Resolution (Gray Color)
90X60 Resolution (Gray Color)
2. Automatically refresh the snapshot image using Client Pulling Method
For Video Channel#0(Internal CAM)
720X486 Resolution
360X243 Resolution
To Home

A user makes hipper link this menu at other Internet homepage to monitor the WebEye.

# VII. Configuring Administrator's Condition at WebEye Homepage

*This page is for administrator. Administrator may control operating status remotely. This page can be accessed through Setup program by clicking 'Start Configuration' button.*

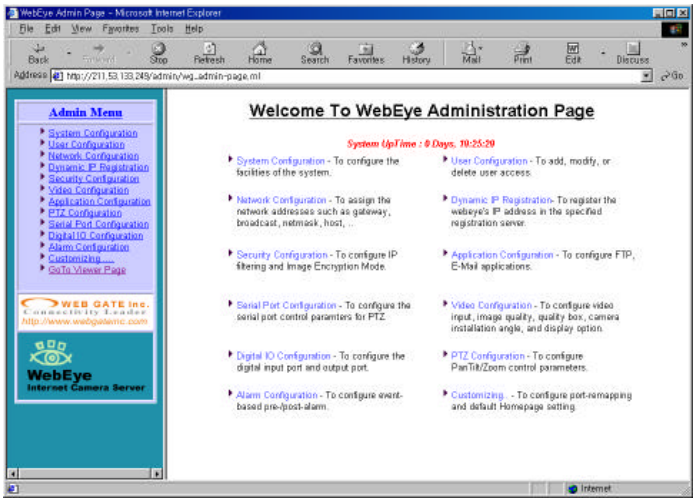
## 1. Administrator Login

### 1) Accessing through setup program

First you click on MAC address or IP address of WebEye to select a certain one. Then you key in the administrator's ID and password (Default ID and password are 'admin'), and click 'Start Configuration' button in turns. When you click 'Start Configuration' button, the setup program automatically connects you to Admin page of WebEye Homepage. (For more detailed information how to access the page through Setup program, refer to Chapter V 'Assigning IP address and Configuring Administrator's Condition')

### 2) Accessing through Web browser

On Web browser, a user may access WebEye login page with its IP address. In the login page, a user may key in administrator's ID and password or a normal user's ID and password. With any of ID and password, the user may access real time image viewer page.




However administrator can monitor and control real time image viewer with administrator's authority. And a normal user may monitor and control the viewer page with assigned authority. If a normal user goes to administration page, one should pass login page again to key in administrator's ID and password while administrator may access the administration page directly.

Both default administrator's ID and password are set as 'admin', and administrator and users accounts (ID and password) are to be changed in administration page. But, each ID and password must be composed within 9 bytes. (e.g. 9 English letters)

In the administration page, there are 12 sub-pages where to configure WebEye operating conditions. It is very import to configure the conditions properly to utilize WebEye well. The last menu 'Goto Viewer Page' is to go back to real time image viewer.

## 2. Configuring Administrator's Condition at Homepage

### 1) System Configuration

This page is to set name, date & time, location, and description of one's WebEye. Model, serial number and software version appear automatically.

System Configuration

| Parameter Name | Parameter Value |
|---|---|
| WebEye Name | WebEye |
| Model | E104 (Detailed H/W Information) |
| Serial Number | W10100100383 |
| S/W Version | 1.2.0 |
| Installation Location | Seoul, Korea |
| Additional Description | Welcome to WebEye World |
| Video Channel Selection for CAM#1 | INTERNAL(CH#0) EXTERNAL(CH#1) |
| WebEye Current Date&Time | 2001-06-09 18:50:54 (yyyy-mm-dd hh:mm:ss) |
| System(PC) Current Date&Time | 2001-06-09 20:31:07 Time Synchronization |
| Manual Date&Time Setting | 2001-06-09 18:50:42 Time Synchronization |
| Administrator's Email Address | yours@your.org.domain |
| Initializing Flash Information | Factory Setting |
| Rebooting forcely | Rebooting |
| | Apply Cancel Help |

#### (1) WebEye Name

The name is to be used to register the WebEye on a certain server, if you use dynamic IP address. Therefore it is very important to set a proper name for user to find the WebEye in the dynamic IP registration list. (For detailed information, refer to 'Dynamic IP Registration Service for ISDN, xDSL User')

#### (2) Model

By clicking 'Detailed H/W Information', you may view detailed hardware information such as maximum numbers of channel, serial port, digital input, digital output, etc. The model name is marked automatically.

#### (3) Video Channel Selection for CAM#1

Administrator may decide if one uses external CCD camera connecting to the port of 'Ch1' in the rear of WebEye E104 or uses self-contained CCD module of WebEye E104. Please keep in mind that this menu is only for the first port in the rear of WebEye with name 'CH1'. With WebEye E10, 'Video Channel Selection for CAM#1' is not activated. Because 'CH#0(Internal)' is fixed to show video from an inner CCD module and 'CH#1(External)' is fixed to show video from an external CCD camera.

#### (4) Installation Location & Additional Description

The information is shown in the real time image viewer page as well as in a dynamic IP registration list.

#### (5) Date & Time

There are three date & time menus. In 'WebEye Current Date & Time' panel, the date and time, which is set in WebEye, appears. In 'System (PC) Current Date & Time' panel, the same date and time as is set in user's PC appears. And administrator may set one's system(PC)'s date and time into WebEye by clicking 'Time Synchronization' button. In 'Manual Date & Time' panel, user may set date and time. And administrator also synchronizes manually set date and time with 'WebEye Current Date & Time' by clicking 'Time Synchronization' button.

**(6) Administrator's E-mail Address**

In this panel, administrator records one's e-mail address. If administrator put a 'contact' menu of e-mail communication on real time image viewer page, the linked e-mail address to the 'contact' menu is to be synchronized with this. So administrator can keep up e-mail address easily.

**(7) Initialize Flash Info**

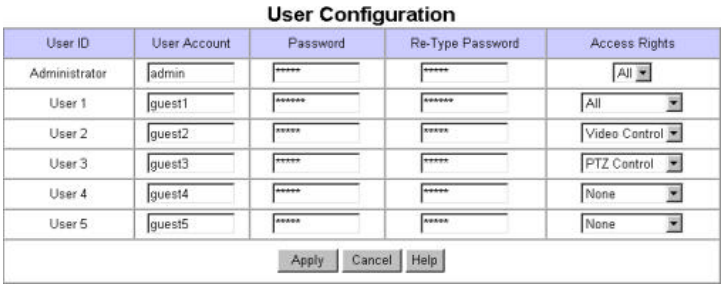
Administrator initializes almost all the information saved on flash memory. However 'Date & Time', 'Model', 'Serial Number', IP configuration, passwords, and all items in 'Video' menu are not initialized.

**(8) Rebooting**

If WebEye has any problem, administrator can reboot it without adjusting power supply. This button works as on/off switch.

## 2) User Configuration

This page is to configure IDs and passwords of an administrator and 5 users.




**(1) User Account**

There are one administrator's account and 5 users' accounts. Account name can be changed.

**(2) Password**

If you want to open your WebEye to everyone, you may not change default user's ID and password. However you should change administrator's ID and password with unique ones of yours.

**ID and Password Limitation**

It is very important to compose any ID or password within 9 bytes' limit. 9 bytes are equal to 9 English characters.

**(3) Access Rights**

Administrator may give or forfeit users' right of PTZ control and video control. With default setting, administrator has both right of PTZ control and video control and normal user doesn't have any right.

- **Video control**: This is to control pop-up menus such as image information, image quality level and QBOX settings.
- **PTZ control**: This is to control 'Focus Sensitivity' in pop-up menu and to control PTZ mechanism of a dome camera.

### 3) Network Configuration

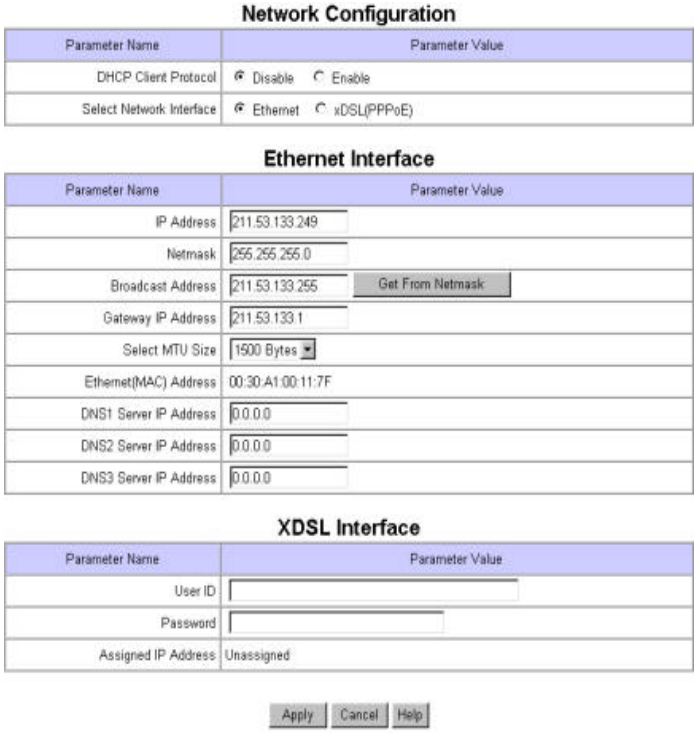
This page is to define network type and set network addresses of WebEye.

**(1) DHCP Client Protocol**

If administrator activates 'DHCP Client Protocol' menu, all the addresses are going to set automatically by WebEye detecting them from DHCP server of your ISP. The detected addresses are not seen on the screen. And administrator needs not to configure all the address manually.

**(2) Select Network Interface**

If WebEye is connected on xDSL line that needs PPPoE process, administrator should select 'xDSL (PPPoE)'. However the xDSL line doesn't need PPPoE process, administrator should select 'Ethernet' though WebEye is connected on xDSL line.




**(3) Ethernet Interface**

Administrator may configure IP address, subnet mask, broadcast address, gateway address, and DNS addresses of WebEye. For broadcast address, administrator may set it automatically by clicking 'Get From Netmask' button after assigning IP address and subnet mask. When the addresses are not assigned properly, any user cannot access WebEye from local or remote network. Even on the local network, a user is not able to access if administrator does not assign a proper IP address to WebEye. Please refer to appendix 3 'Utilizing IP Address on Local Network' for more detailed information.

**MTU Size** : Depending on network type, administrator may set data packet size with this menu to utilize the network at most effectively.

**DNS Server IP Address**: This is used when you register your WebEye on dynamic IP registration list of WRS (WebEye Registration Server). WRS has its domain name of 'webeye.to' and the domain name is registered on DNS servers on the world. When your WebEye asks the DNS server on your network, the DNS server resolves the corresponding IP address of 'Webeye.to' and informs the IP address to your WebEye. Then your WebEye may connect WRS. So it is necessary you get information on DNS server's IP address and enter into the blanks.

## DNS (Domain Name System)

DNS (Domain Name System) is to map between IP address and domain name. Every network device on the world has its IP address to be connected on Internet. And the device is to be connected not with its domain name but with its IP address. Common users are not familiar with IP addresses but with domain names.

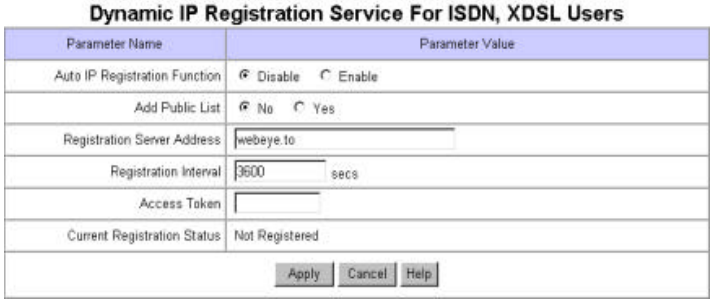
If a user accesses a certain network device with its domain name, DNS server resolves the domain name into an IP address of the device and replies the result to the user. A lot of DNS servers are run on Internet worldwide.

**(4) xDSL Interface**

If WebEye is connected on xDSL line and needs PPPoE process, administrator should select 'xDSL (PPPoE)' and configure ID and password for PPPoE. ID and password may be acquired from the ISP that installed the line. And WebEye may get IP address when it is connected on xDSL line.

### 4) Dynamic IP registration service for ISDN and xDSL users

This page is to register WebEye on dynamic IP registration server.




If WebEye is installed on a network of dynamic IP address (floating IP address), administrator should register the WebEye to 'dynamic IP registration server' to give simple connectivity to common users. If not, no one can access the WebEye through Web browser. It is because that no one knows with which IP address one can access the WebEye.

To solve the problem WebGate run a server making a list of WebEyes that have dynamic IP addresses. On the server, WebEye registers its information such as name, location, and description, so that common users may detect a certain WebEye. Name, location and description are assigned at 'System Configuration' page. If administrator does not change them, the WebEye will register default information on the list, and it will be very difficult to point out and access a certain WebEye. The list is on an Internet homepage of WebEye, 'www.webeye.to'.

**(1) Auto IP Registration Function**

Administrator may register one's WebEye by enabling 'Auto IP Registration Function'. Registration process is that WebEye detects IP addresses from DHCP server and informs the detected IP addresses to dynamic IP registration server. And the server updates already registered information with new one. Please keep in mind that user have to enable 'DHCP Client Protocol' at 'Network Configuration' page to have WebEye get dynamic IP addresses automatically, when WebEye is installed on a network of dynamic IP address. With 'Auto IP Registration Function' menu, a WebEye of fixed IP address can also be registered on the list.

**(2) Registration Server Address**

This is to configure a server address for registration. The registration server to be used for Dynamic IP registration should be installed proper S/W, developed by WebGate Inc. If you do not run a server for IP registration, keep the server's name as default figure (webeye.to).

**(3) Registration Interval**

Dynamic IP address is commonly used on xDSL, ISDN or Cable Modem lines. To maintain continuous connectivity, user should reset the 'Registration Interval' shorter than the default value. Because an IP is to be changed from time to time, some user may not access by clicking on a WebEye if actual information on WebEye is changed from the registered IP information on the dynamic IP registration server.

**(4) Add Public List**

There are two registration systems. One is to register on a public list and another is on a private list. Please refer to Article 3) 'How to find registered WebEye in WebEye Internet homepage' for more detailed information.

- **Public List**: This list is open to anyone who accesses WebEye Internet homepage (www.webeye.to).
- **Private List**: This list is not seen to anyone. Even the owner of a WebEye can get the information on one's WebEye only without viewing information on other's WebEye.

**(5) Access Token**

Access token is a password and it is used when you register your own WebEye on a list 'User's WebEye' out of all WebEyes on WRS(WebEye Registration Server. Please refer to Article 5) 'How to find registered WebEye in WebEye Internet homepage' for more detailed information.

**Private List and Access Token**

You should set the access token if you configure your WebEye to register its information on a private list at WebEye Internet homepage (www.webeye.to ). Otherwise you cannot access the private list nor find the information on your WebEye.

Access token is to be set 9 bytes. 9 bytes are equal to 9 English characters.

**5) How to find registered WebEye in WebEye Internet homepage**

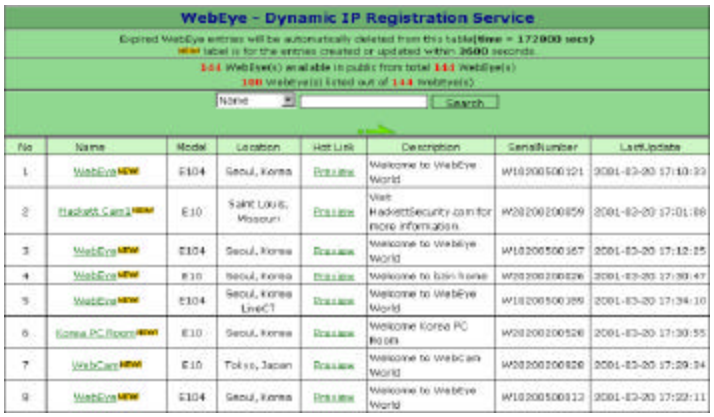
On WebEye Internet homepage (www.webeye.to), there are menus to find WebEye that is registered on WRS (WebEye Registration Server).

**(1) Sign up membership**

To search your WebEye out of a public list or a private list, you have to sign up membership first. You may sign up on the server through 'Membership' menu.

**(2) Finding WebEye from public list**

To access WebEye that is registered on public list, you may find it through 'Service' or 'Demo' menus. Once click 'Service' or 'Demo' menu, you may find 'WRS (WebEye Registration Service) WebEye list' on WRS page that is a main page of the 'Service' menu. The sub-menu 'WRS' is on the left side.




You may search your WebEye with several conditions such as name, model, location, description, serial number, and IP address. ('IP address' is to be used only when you assigned your WebEye a fixed IP address)

After finding your WebEye, you may access it by clicking on the name. By clicking on 'Preview', you may monitor real-time image from WebEye without logging in WebEye. However 'Preview' is available only when the WebEye is configured to have its ID and password as default values 'guest' and 'guest'.

**(3) Finding WebEye from private list**

To access WebEye that is registered on private list, you should make your own WebEye list before. You may make the list through 'User's WebEye' menu. In the list, there are to be registered any WebEye from the 'Public List' or 'Private List'. On 'User's WebEye' page, there two sub-menus, 'Your WebEye List' and 'Search and Append'.

**My WebEye List**: You may maintain your own WebEye registering it on this list. When you login this homepage, WRS (WebEye Registration Server) detects and shows all the WebEyes that you listed appear on your own list. There for you may access any of them without searching it from WRS (WebEye Registration Service) list nor verifying access token again. So it is very convenient to have the list when you run several WebEyes having dynamic IP addresses.

>-Name = WebEye | IPAddr = 211.53.133.90 | MacAddr = 00:30:A1:00:10:12 | Public = Public
>-Name = NetCam | IPAddr = 211.53.133.249 | MacAddr = 00:30:A1:00:11:7F | Public = Public

**Search and Append**: This menu is to append a certain WebEye on your own list. You may append WebEye on your own list as follows.

- Key in serial number(W100000000000), MAC address(e.g. 00:00:00:00:00:00), and access token of a certain WebEye in the box.

- Click 'Append' menu.
- WRS (WebEye Registration Server) search a corresponding WebEye with the conditions from both the 'Public List' and 'Private List' and registers the WebEye on your own list.

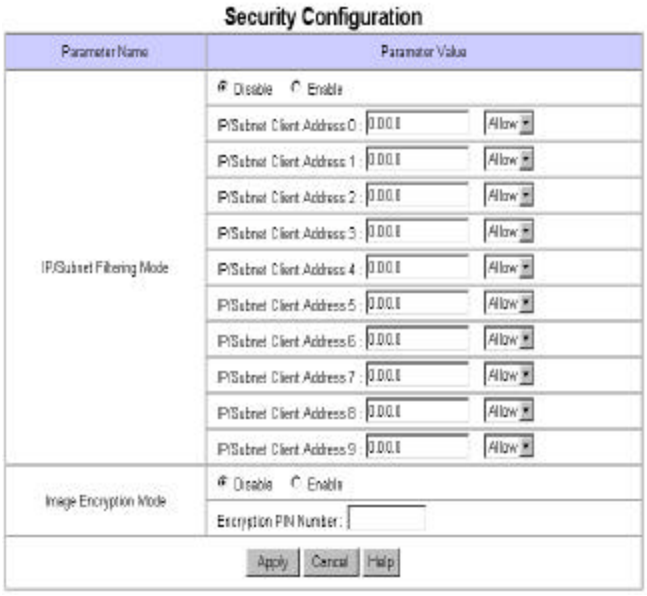
### 6) Security Configuration

This page is to control accessibility to one's WebEye with IP addresses.

**(1) IP/Subnet Filtering Mode**

If this function is on, only the user whose PC's IP address is registered on WebEye can access the WebEye. Administrator may temporarily disallow a registered user to access to WebEye with a menu on the right side of each IP address. Any IP addresses are to be listed.

If administrator inactivates 'IP/Subnet Filtering Mode', anyone may access one's WebEye through a Web browser with any PC.


Security Configuration
Parameter Name
Parameter Value
IP/Subnet Filtering Mode
Disable
Enable
IP/Subnet Client Address 0 : 0.0.0.0 Allow
IP/Subnet Client Address 1 : 0.0.0.0 Allow
IP/Subnet Client Address 2 : 0.0.0.0 Allow
IP/Subnet Client Address 3 : 0.0.0.0 Allow
IP/Subnet Client Address 4 : 0.0.0.0 Allow
IP/Subnet Client Address 5 : 0.0.0.0 Allow
IP/Subnet Client Address 6 : 0.0.0.0 Allow
IP/Subnet Client Address 7 : 0.0.0.0 Allow
IP/Subnet Client Address 8 : 0.0.0.0 Allow
IP/Subnet Client Address 9 : 0.0.0.0 Allow
Image Encryption Mode
Disable
Enable
Encryption PIN Number :
Apply
Cancel
Help

**Principle of 'IP/Subnet Filtering Mode'**

The principle of 'IP/Subnet Filtering Mode' is to deny. Therefore WebEye is to deny every user even the owner if you enabled the function without assigning a certain IP address to the WebEye.

**(2) Image Encryption Mode**

Administrator may restrict people to receive images from one's WebEye, even though people accessed it. If 'Image Encryption Mode' is enabled and a pin number is assigned, people have to key in the assigned pin number to see image after accessing WebEye image viewers. Encryption PIN (number or character) should be consisted in 9 bytes. 9 bytes are equal to 9 English characters.

'Security Configuration' is a double-checking function to control accessibility, utilizing 'User Account Configuration' at the same time.

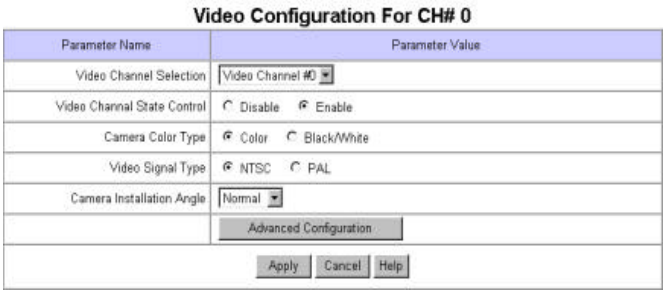
## 7) Video Configuration

This page is to configure every channel with various conditions.

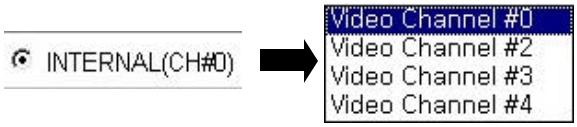
### (1) Video Channel Selection

**WebEye El04**

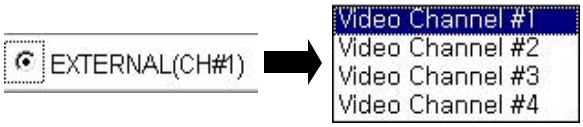
User chooses video channels to configure. In the list, there are 4 video channels including 'Ch#0(Internal)' or 'Ch#1(External)' that administrator selected at 'System Management' page.




If administrator selected 'Ch#0(Internal)' at 'System Management' page, 4 video channels of 'Ch#0, 2, 3, 4' appear here.




If administrator selected 'Ch#1(External) at 'System Management' page, 4 video channels of 'Ch#1, 2, 3, 4' appear here.




**WebEye E10**

Different from WebEye E104, WebEye E10 has only two channels as 'Ch#0(Internal)' and 'Ch#1(External)'. 'Ch#0(Internal)' is fixed for internal CCD module, and 'Ch#1(External)' is for external CCD camera.

### (2) Video Channel State Control

Administrator decides whether to utilize video signal from selected channel in WebEye or not. If user disables a channel with an external camera connecting to WebEye, WebEye does not show any image from the channel. If user enables a channel without connecting an external camera to WebEye, WebEye is interrupted and cannot transmit image properly (**transmission speed of total channels go down**).

### (3) Camera Color Type

It is to define every camera whether it is color or B/W camera. This is not to change its original character but only to define the character and give information to WebEye.

### (4) Video Signal Type

It is to define CCD module of WebEye and external CCD cameras between 'NTSC' and 'PAL'.

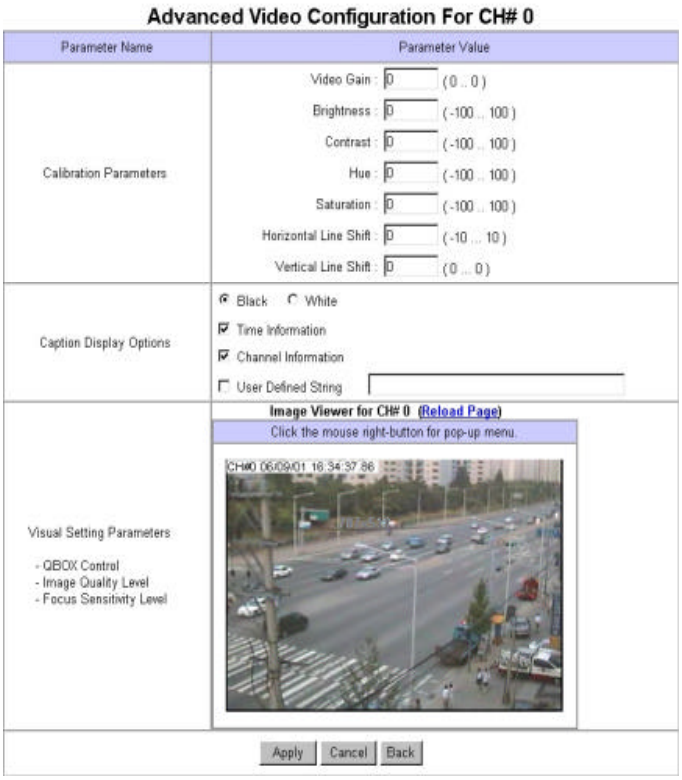
### (5) Camera Installation Angle

WebEye can always show images in right angle regardless its installation position. If WebEye is located on the wall upside down, user can adjust image angel by selecting '90 deg.' or '270 deg.'

**(5) Advanced Configuration**

**Calibration Parameters**

Administrator manipulates screen settings by adjusting brightness, contrast, hue, saturation, horizontal line shift, and vertical line shift from the menu. With 'Video Gain' menu, you may optimize the image without adjusting each value of other menus. However 'Video Gain' and 'Vertical Line Shift' are not supported currently. They are to be supported in near future.


Advanced Video Configuration For CH# 0
Parameter Name
Parameter Value
Calibration Parameters
Video Gain : 0 ( 0 .. 0 )
Brightness : 0 ( -100 .. 100 )
Contrast : 0 ( -100 .. 100 )
Hue : 0 ( -100 .. 100 )
Saturation : 0 ( -100 .. 100 )
Horizontal Line Shift : 0 ( -10 .. 10 )
Vertical Line Shift : 0 ( 0 .. 0 )
Caption Display Options
Black White
Time Information
Channel Information
User Defined String
Visual Setting Parameters
- QBOX Control
- Image Quality Level
- Focus Sensitivity Level
Image Viewer for CH# 0 (Reload Page)
Click the mouse right-button for pop-up menu.
Apply
Cancel
Back

**Caption Display Options**

Administrator may configure caption on real time image with display options such as color and contents. Caption is to be made of time information, channel information, and additional explanation (user defined string).

**Visual Setting Parameters**

Administrator may configure QBOX and image quality level with aid of real time image. By placing the mouse curse on real time image and clicking the left button, you may view pop-up menus.

- **QBOX Parameters**: Administrator sets QBOX area with a mouse to 'click and drag'. Selected area shows in 'Left Top Placement' and 'Right Bottom Placement' panels in figures. With 'Ambient Level' menu, Administrator may set quality level of unfocused area in the image (out of the focused range). There are 5 levels. Administrator may set level 5(Darker) to make unfocused area dark and get the transmission speed up.

- **Image Quality Level**: Administrator chooses image quality level from 0 to 9. If level 9 is chosen, WebEye sends the finest image. However, transmission speed will be reduced because of larger sized data. The image level inside the 'QBOX' is the same level as is selected in this menu.

**8) Application Configuration**

This page is to configure e-mail and file sending function.

**(1) Select Video Channel**

It is to select a video channel for configuration. The four channels in WebEye E104 or two channels in WebEye E10 are shown in the panel are same as seen in 'Video Configuration' page.

**(2) Recipient E-mail Address**

This is to designate a person to receive E-mail.

**(3) Sender's E-mail Address**

This is to put a person's e-mail address that is considered as the e-mail sender.

The e-mail sender can be a person who should take care of the situation when events occur. E-mail will be delivered to a person who is defined as a recipient in the blank of 'E-Mail Recipient'. The person who received e-mail can send a message of countermove to a person who is defined as an e-mail sender. Actually, WebEye sends E-mail, but it is no use sending E-mail back to WebEye. So a person can be designated to receive counter e-mail.

Another important function of this menu is to avoid a problem that the e-mail is blocked from e-mail server. Some e-mail servers don't receive an e-mail that does not have its valid domain name such as abc@abcdefg.com. It is because there are a lot of junk e-mails. So WebEye and other devices that do not have their valid domain names or only have their IP addresses can't send e-mails. To avoid this problem, WebEye has the menu to put sender's e-mail address. The default value is invalid, so administrator should change the address with valid one. Administrator may put one's e-mail address.

**(4) Check E-Mail Options**

**Relay Mail Server**: With the same problem of e-mail blocking, WebEye has a function to relay its e-mail through an available e-mail server so that e-mail can have the relay server's domain name. After activating 'User Relay Mail Server' menu, you key in a server's domain name such as '@abcdefg.com'. The e-mail server of default value is invalid, so don't use the default value when you have to use relay mail server function.

**Content-Transfer-Type**: It is to define e-mail format. E-mail servers support 'Base64' format in common, but some servers not. In the case, you may select the format as 'Quoted Printable'.

**(5) E-Mail Event Configuration**

**Event source**: Administrator should define with which event E-mail is to be delivered among MD

(motion detection), sensor 1, sensor 2, sensor3, and sensor 4. If administrator clicks on sensor1, e-mail is sent when the sensor1 detects events. (To utilize sensor input detection, a sensor should be connected to WebEye.) If administrator clicks on periodic sending, e-mail is sent periodically every preset time. The interval may be modified.

**File name**: With the images of MD and Sensor event, a file is named combining all options. And with the image of periodic sending event, administrator may decide how to name image files among three methods. Administrator names a file with data & time (DATETIME; E.g IMG-CH00-2001030-223031.eye) or serial number (SEQNUM; E.g. IMG-CH00-SN1.eye). Also administrator names the file with a fixed one (Manually assigned filename). The image file has its extension of 'eye' so that the file is to be reproduced on Internet browser. With DATETIME or SEQNUM format, WebEye automatically put its extension as eye. When a file name is set manually, make sure to put its extension with 'eye' (e.g. manual.eye). If not, the file cannot be reproduced on Internet browser or other program.

**Image quality**: Administrator may set image's resolution that is delivered by e-mail. Resolution is to be set among 90x60, 180x121, 360x243, 720x243, and 720x486. An image of 90 by 60 is of the lowest resolution and the smallest size.

**Check Points for E-mail Sending Problem**

If you have problem in sending e-mail, check followings;

- If you have set DNS address properly in 'System Configuration' page.
- If you have set sender's e-mail address properly in 'Application Configuration' page.
- If you have set e-mail type properly between 'Base64' and 'Quoted Printable'.

**(5) FTP directory configuration**

Administrator assigns FTP server address, FTP user account, FTP user password, and FTP user path to receive files when events occur.

**(6) FTP event configuration**

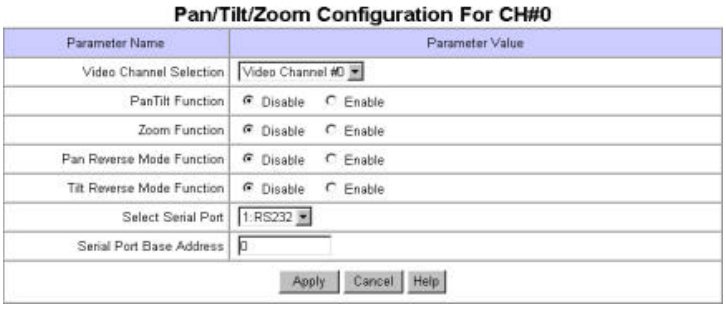
Administrator may set sending conditions, image resolution, and filename. Image resolution, filename, and sending conditions setting methods for FTP are same as that of e-mail.

**Transmission Performance of E-mail and FTP**

- WebEye sends send once in five minutes at most when administrator configures WebEye to send e-mail periodically. If there is no restriction in sending e-mail, WebEye may cause a serious problem to the recipient's mail server. However there is no limit in sending e-mails under MD or sensor activated situation.
- With FTP function, there is no limit. And if the periodic sending menu is set as zero(0), WebEye transmits files at its best performance.

### 9) Pan/Tilt/Zoom Configuration

This page is to decide whether to use pan/tilt/zoom control function or not and select which serial port to use.




**(1) Video Channel Selection**

Administrator selects a video channel to utilize pan/tilt/zoom mechanism. The four channels shown in the panel are same as seen in 'Video Configuration' page.

**(2) Pan Tilt Function**

Administrator defines whether to utilize pan/tilt control function or not.

**(3) Zoom Function**

Administrator defines whether to utilize zoom control function or not. With WebEye E10, internal channel has fixed lens and doesn't support zoom function, therefore the menu is not on the page.

**(4) Pan Reverse Mode Function**

This is to set command reverse direction against to right and left direction control arrows. This function is useful when PT driver is installed upside down.

**(5) Tilt Reverse Mode Function**

This is to set command reverse direction against to up and down direction control arrows. This function is useful when PT driver is installed upside down.

**(6) Select Serial Port**

It is to select a serial port between 'Serial #1' and 'Serial #2' with which a pan/tilt/zoom control receiver is connected to WebEye. With WebEye E104, administrator should select proper serial port between them. It is because the two ports have different interface each other.

**WebEye E104**

WebEye E104 has two pairs of interface pins. One pair is RS232C interface and another is RS485 (Half-Duflex) interface. Among DB-15 pins located in the rear of WebEye E104, pins of number 1 and number 2 (marked as RXD and TXD) are RS232C interface and this pair is 'Serial #1'. Pins of number 3 and number 4 (marked as S+ and S-) are RS485 (Half-Duflex) interface and this pair is 'Serial #2'.

**WebEye E10**

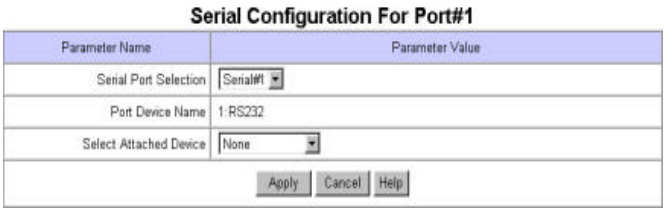
WebEye E10 also has 2 pairs of interface pins. Among DB-15 pins located in the rear of WebEye E10, pins of number 1 and number 2 (marked as TX1 and RX1) are RS232C interface and this pair is 'Serial #1'. Number 3 and 4 pins (marked as TX2 and RX2) are also RS232C interface and this pair is 'Serial #2'.

**(7) Serial Port Base Address**

This menu is to identify the base addresses between a channel of WebEye and pan/tilt/zoom control receiver. Administrator may connect more than 2 pan/tilt/zoom control receivers to Serial #2 (RS485 (Half-Duflex)) with WebEye E104. In this case, administrator should configure control receivers' base addresses in the blank of each channel to control each pan/tilt/zoom mechanism respectively for each channel. User may also utilize a control receiver for all 4 channels. In this case, every pan/tilt driver or zoom lens of 4 channels is to move at same directions or degrees at the same time. WebEye E10 has two pairs of serial ports, so that it is sufficient for all channels.

## 10) Serial Port Configuration

This page is to select a communication protocol among listed ones or to set control parameters manually for each serial port.

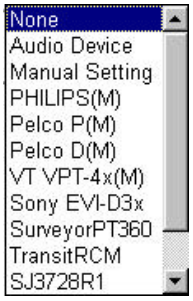



**(1) Serial Port Selection**

Administrator selects a serial port to configure. WebEye E104 has two serial ports. Serial #1 is a RS232C interface port, and Serial #2 is a RS485 (Half-Duflex) interface port. WebEye E10 has two serial ports, and two of them are RS232C interface ports.

**(2) Select Attached Device**

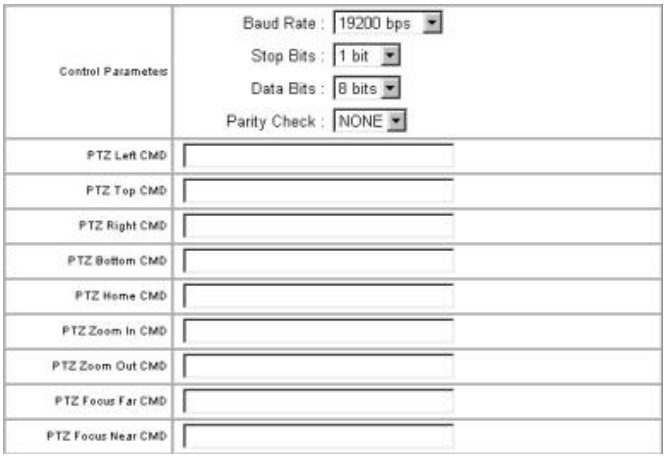
**PTZ protocols**




Administrator selects a communication protocol that an attached external device satisfies among already listed protocols. WebGate has listed protocols of Philips, Pelco (P and D), Video Technical (VTP 4x), Sony (EVI-D3x), etc. Administrator may utilize any pan/tilt mechanism that satisfies already listed protocols. Among listed protocols, Philips, Pelco, Sensormatic and VT protocols are marked with 'M' and they are to be configured their control parameters such as 'Baud Rate', 'Stop Bits', 'Data Bits', and 'Parity Check' according to connected dome camera settings.

**Manual Setting**

If your mechanism doesn't use any of already listed protocols, you may set the protocol manually by selecting 'Manual Setting' and set parameters through 'Control Parameters' and 'PTZ CMD' menus. For detailed information, please refer to following explanation.




**Audio Device**

This protocol is for WebEye A10, which is an audio trans mission device connected to WebEye. For more detailed information on WebEye A10, please refer to WebEye A10 User's Guide.

## PTZ Command for Manual Script

**1. Escape Characters**

| | |
|---|---|
| # | Special command |
| @ | Hexadecimal character |
| % | Decimal character |
| ^ | Character |
| , | Break character |
| ; | End of current packet |
| & | Special operation |

**2. Special command (Followed by #)**

| | |
|---|---|
| A | Address assigned by PTZ configuration |
| X | Acceleration rate selected by user |
| S*x* | Checksum calculation method |
| *x* = 0 | Sum of entire frame, size = 1byte |
| *x* = 1 | Sum of entire frame, size = 2byte |
| *x* = 2 | Sum of entire frame except first byte(sync), size = 1byte |
| *x* = 3 | Sum of entire frame except first byte(STX) and last byte(ETX), size = 1byte |
| *x* = 4 | Sum and one's complement of entire frame except first byte(STX) and last byte(ETX), size = 1byte |
| *x* = 5 | XOR sum of entire frame, size = 1byte |
| *x* = 6 | XOR sum of entire frame, size = 2byte |
| *x* = 7 | XOR sum of entire frame except first byte(sync), size = 1byte |
| *x* = 8 | XOR sum of entire frame except first byte(STX) and last byte(ETX), size = 1byte |
| *x* = 9 | XOR sum and one's complement of entire frame except first byte(STX) and last byte(ETX), size = 1byte |

**3. Special Operation (Followed by &)**

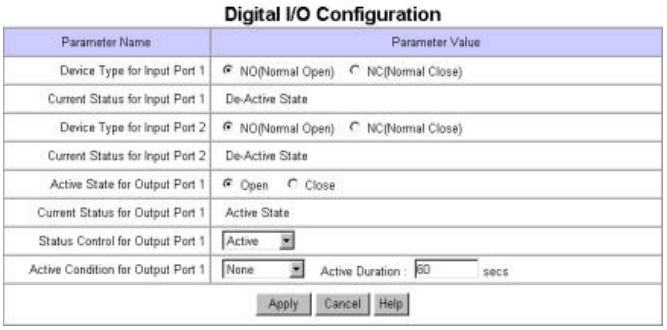
| | |
|---|---|
| S*x* | Delay about ( ([*acceleration rate*] + 1) * (100 * *x*) ) ms |
| *x* | 0 ~ 4 |

**4. Exceptions**

Normal character following Escape Sequence, must use break character for identify end of sequence

- Some protocols are not to be made command script with above method. It is because they have another method of checksum calculation. If your protocol does not use above checksum calculation method, please inquire WebGate Inc. through its Internet homepage. In the case, it is necessary to send the protocol together.

## 11) Digital I/O Configuration




This page is to configure digital input/output states and control script. WebEye sends e-mails or/and files when connected external sensors detect events.

**(1) Device Type for Input Port 1 & 2**

Administrator defines active state of 2 digital devices connected to two input ports such as infrared sensors. If you connect normal open type device to input port, you should select 'NO (Normal Open)'. With normal close type device, you should select 'NC (Normal Close)'.

**(2) Current State for Input Port 1 and 2**:

WebEye shows current states of the 2 digital devices connected to 2 input ports. In the status panel, active state or de-active state message shows. 'De-Active State' means that connected device didn't detect any event when 'Apply button' is clicked. Though this message is not updated until you click 'Confirm' button again, WebEye keeps on receiving status information from the connected device.

**(3) Active State for Output Prot 1**

Administrator defines active state of a digital device to be connected to the output ports such as an electronic locker or a switch. Active states of digital devices may differ depending on items or models (select between 'Open' or 'Close')

**(4) Current State for Output Port 1**

According to active state definition, WebEye shows current states of the digital device connected to an output port. Its state is defined at 'Active State for Output Port' menu.

**(5) Status Control for Output Port1**

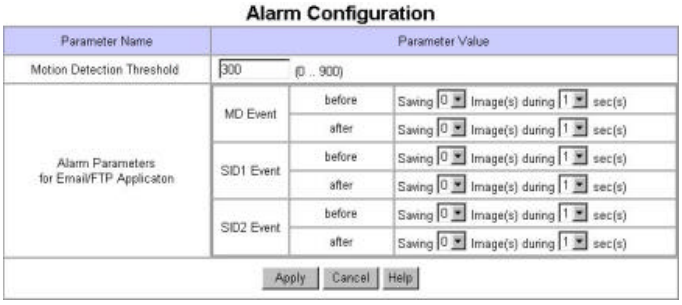
Administrator controls an external device that is connected to the output port. After defining active state of the device at 'Active State for Output Port 1', Administrator controls the device to act or not with this menu.

**(6) Active Condition and Duration for Output Port1**

Administrator defines active conditions for an external device such as an electric light that is connected to the output port. After defining active state and controlling status of the device, administrator defines active conditions among internal S/W motion detection (MD Event) and two external sensors (SID1 & SID2 Event). And 'Active Duration' menu is to set the period of time to activate the external device after detecting event. If the event lasts long, WebEye activate the device for preset time after the last event detection.

## 12) Alarm Configuration

This page is to set conditions for recording images during event situation, so that WebEye sends the images through e-mail or FTP.




### (1) Motion Detection Threshold

Administrator sets threshold for motion detection function. Threshold '0' is the most sensitive state and '900' is the dullest state.

### (2) Alarm Parameters for E-mail / FTP Application

Administrator defines conditions for recording image to WebEye, if WebEye detect events through motion detection unction (MD Event) or external devices (SID1 and SID2). WebEye can record 2 frames for 2 seconds before the event and 2 frames for 2 seconds after the event as well as 1 frame at the moment of event. Its maximum recording rate is 1 frame per second and the total fames are maximum 5. WebEye records the images and send them through e-mail or FTP according to preset conditions on 'Application Configuration' page and 'Alarm Configuration' page. If event lasts long, WebEye sends images not duplicating regardless overlapped time setting. The resolution of the image is fixed as 360x243.

## 13) User Custom Configuration

This page is to customize TCP ports of data transmission and default viewer composition.

### (1) Web Server TCP Port

Administrator assigns a web server TCP port through which people can access WebEye and WebEye sends data. 80th port is assigned default value.

### (2) Video Server TCP Port

Administrator assigns a video server TCP port through which WebEye transmits images to users. 8080th port is assigned as default value.

### (3) Select Main Page

Administrator assigns a viewer as a main page that appears first when users access Webeye. Administrator can select a viewer among 7 different ones such as 'Default Simple Viewer', 'Default Multi Viewer', 'Simple Single Viewer', 'Simple Multi Viewer', 'Normal Single Viewer', 'Normal Multi Viewer', and 'Server Push Viewer'. Single Viewer is to show image from Ch#0(Internal) and Multi Viewer is to show all images from 4 channels (WebEye E104) or 2 channels (WebEye E10).

**(4) Default Viewer Editing**

'Default Viewer' is designed for users to edit easily. Editable parts are as bellows.

- **Main Title** : It is to change the main title that is written on the bottom of the default viewer.
- **Logo Image Source URL**: Administrator may assign a URL of a certain web site from which default viewer gets a logo. The space to put a log locates on the left top of the viewer.
- **Logo Image Link URL** : Administrator may link the logo with a certain web page. User can link the logo with a company homepage or a personal one.
- **Background Color and Foreground Color**: Ground color of default viewer can be changed. Administrator may set the color with RGB value.

**When the changed settings are to be affected?**

You have to click 'Apply' button at every administration page, if you want to apply changed settings onto your WebEye.

**14) Goto Viewer Page**

This menu is to return to real time image viewer page from administration page.

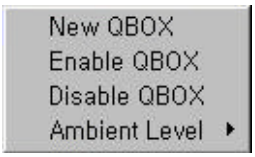
## VIII. Convenient Functions of Mouse (Pop-up menu)

A small window of 5 menus appears when you click the right button of the mouse. However only a certain users who are permitted can utilize the functions such as 'Image Info', 'Quality Box', 'Focus Sensitivity', and 'Image Quality'. And the results of the four functions are to be affected in every image that is transmitted to all users. 'Save File As' menu is permitted to any user. (For detailed information, refer to 'User account management' in Chapter VII).

### 1. Image Info

You may decide the color (black or white) of the information that is shown on the left top of the image. And you may leave out the information. A user who has 'Video control' right may utilize this menu.

### 2. Quality Box

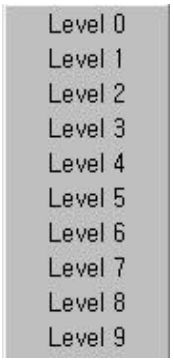



This is to set a certain area clear and remained area dull. You can overcome insufficient network bandwidth with this function, because the file size is reduced with unfocused area. Quality Box is to be set like under written description.

- Choose 'New QBOX' button.
- Place mouse cursor on a certaion point of real time image where to start QBOX.
- Click and drag the mouse point.

You can also re-use previous QBOX area to focus again by clicking 'Enable QBOX'. 'Disable QBOX' is to finish. The image activated Focusing Area function is seen in the right. The image quality of outer area of QBOX is to be set with 'Ambient Level' menu. The level is from 1 to 5. If you select 'Level 1', the quality is similar to focused area. And if you select 'Level 5', the unfocused area is shown dark. A user who has 'Video control' right may utilize this menu.

### 3. Focus sensitivity




You may configure movement degree of zoom mechanism. The sensitivity is from Level 0 to Level 9. By selecting 'Level 9', user zooms in or out at the largest degree. A user who has 'PTZ control' right may utilize this menu.

### 4. Image quality

It is to set image quality. The image quality is from Level 0 to Level 9. If user chooses the 'Level 9', WebEye sends the finest image. However, transmission frame rate will be reduced because of large sized data. If user chooses 'Level 0',

WebEye sends dullest image but fast. A user who has 'Video control' right may utilize this menu.

**5. Save File As**

It is to save a frame of still image as an electric file. A still image can be saved as bitmap (*.bmp) file or Wavelet format file (*.eye). Wavelet formatted image file is to be reproduced on Internet browsers such as Netscape Navigator or Internet Explorer as long as the PC is installed Active-X or Plug-in program. The very image that is shown at the moment when you click the menu is saved.

## IX. Adjusting Focus.

### 1. WebEye E104

**(1)** Adjust focus of WebEye E104 by turning the focus ring in the front of 8mm lens.

**(2)** If lens does not turn, loosen the three tiny screws on the mount.

**(3)** Setting the lens at the middle range, focus by turning the lens itself.

**(4)** Once focus is achieved, fasten the three tiny screws tightly.

### 2. WebEye E10

Turn the lens right or left to adjust focus.

Turn left or right the lens with this part

(Appendix 1)

# Detailed Specifications of WebEye E10

## 1. General

| | |
|---|---|
| **Hardware** | |
| **CPU** | 32bit RISC Embedded processor |
| **Flash memory** | 8Mbyte |
| **RAM** | 16Mbyte |
| **OS** | Embedded Linux |
| **Video Channel** | NTSC or PAL video format are supported |
| | 1Ch. Internal Video Input (Internal Camera) |
| | 1Ch. External Video Input/Output (Optional BNC Connector) |
| **Image Resolution** | 720X486, 720X243, 360X243, 180X121, 90X60 |
| **Image Compression** | |
| **Algorithm** | Wavelet |
| **Rate** | 10:1 ~200:1 |
| **Performance** | |
| **Transfer Rate** | Maximum 123fps (With 3KB image) |
| **Decoding Rate** | 2 ~ 30fps |
| **Local Compression rate** | Max 30fps |
| **Security** | Password Based User Authentication |
| | IP-filtering (Secure Mode) |
| | Image Encryption |
| **Alarms and I/O** | Motion detection |
| | Sends e-mail automatically |
| | Sends the image files through FTP automatically |
| | Software-controlled 2-alarm input |
| **MISC . function** | High quality image area setting |
| | Image quality control (10 Levels) |
| | Periodic sending of images through E-Mail or FTP |
| | Gray/Progressive/Single-Shot Mode |
| | User customized home page publishing supported by FTP |
| **Power Supply** | DC 5V, 1.5A via external power supply |

## 2. CCD Module

| | |
|---|---|
| **Horizontal resolution** | 330 TV lines |
| **Pick-up device** | 1/4 inch interlined CCD |
| **Scanning System** | 525 lines interlaced (NTSC) |
| | 625 lines interlaced (PAL) |
| **Synchronization** | Internal |
| **Output Signal** | Standard composite signal |
| | 1 Vpp composite video into 75 ohms |

| | |
|---|---|
| **Light sensitivity** | |
| **30 IRE** | 5 Lux(Scene) |
| **Electronic Iris** | 1/60~1/96,000(NTSC) |
| | 1/50~1/96,000(PAL) |
| **Signal to Noise Ratio** | 46dB or more (AGC off) |
| **AGC** | ON (0-15dB Max) |
| **Input Voltage** | 5V DC |
| **Power Consumption** | 160mA or less |
| **Ambient Temperature** | |
| **Operation** | -10C (14 F) to +50C (122 F) |
| **In storage** | -20C (-4 F) to +65C (149 F) |
| **Relative Humidity** | |
| **Operation** | Under 90% Non-condensing |
| **In storage** | Under 95% Non-condensing |
| **Weight** | 13 g |
| **Standard Lens** | Fixed, F2.0, f=3.8mm, Horizontal view angle 53° |

### 3. Network

| | |
|---|---|
| **Browser** | MS Internet Explorer V. 5.0 or higher |
| | Netscape V. 4.7 or higher |
| | JAVA Applet for non PC User (MAC or Unix) |
| **Connector** | 10 Based-T Ethernet (RJ-45) |
| **Installation** | Assign IP address using setup program or ARP, RARP protocol |
| **Protocols supported** | TCP/IP, HTTP, ARP, RARP, ICMP, DHCP, FTP, SMTP and PPPoE |
| **S/W Update** | Flash memory allows central remote software updates over network using FTP or private "WebyeUpgrade" program. |
| **Management** | Configuration is achieved by private setup program and Web server built in administration page. |

### 4. Mechanical

| | |
|---|---|
| **Dimension** | H x W x L = 45mm x 92mm x 146mm |
| **Weight** | 187g, without power supply |

### 5. Environmental

(*) This data is a target specification.

| | |
|---|---|
| **Temperature *** | |
| **Operating** | -5°C (23 F) ~ +40 °C (104 F), Gradient 15°C (59 F)/Hr max |
| **Non-Operating** | -20°C (-4 F) ~ +60 °C (140 F), Gradient 15 °C (59 F)/Hr max |
| **Under Shipment** | -40°C (-40 F) ~ +70°C (158 F), Gradient 30°C (86 F)/Hr max |
| | (Packed in WebGate's original shipping package) |

| | |
|---|---|
| **Humidity *** | |
| **Operating** | 8% ~ 90% R.H. No condensation |
| **Non-Operating** | 8% ~ 90% R.H. No condensation |
| **Under Shipment** | 5% ~ 90% R.H.<br>(Packed in WebGate's original shipping package) |
| **Vibration *** | |
| **Acceleration** | 1.2G |
| **Frequency** | 10Hz ~ 60Hz |
| **Sweep Time** | 1 OCT/Min |
| **Shock *** | 10 G (10msec half sine wave Repeated twice maximum/sec) |
| **EMC Adaptability** | EN50082-1: 1992 IEC 801-2: 1991<br>IEC 801-3<br>IEC 801-4<br>EN55022/1994, +A1: 1995, +A2: 1997 Class-A<br>EN61000-3-2: 1995, +A1: 1998, +A2: 1998<br>EN61000-3-3: 1995<br>VCCI<br>FCC Class A |

## 6. Compatible external devices and software

| | |
|---|---|
| **PTZ control** | 2 Ch. RS-232 (15pin DSUB connector)<br>15-pin D-SUB connector is available |
| **Sensor input** | 2 auxiliary inputs are supported, made of 'Opto coupler'<br>Opto coupler stands with 3-5V and 10-20mA(Appendix 2) |

(Appendix 2)

# Detailed Specifications of WebEye E104

## 1. General

| | |
|---|---|
| **Hardware** | |
| **CPU** | 32bit RISC Embedded processor |
| **Flash memory** | 8Mbyte |
| **RAM** | 16Mbyte |
| **OS** | Embedded Linux |
| **Video Channel** | NTSC or PAL video format are supported |
| | 1Ch. Internal Video Input (Internal Camera) |
| | 4Ch. External Video Input/Output (BNC Connector) |
| **Image Resolution** | 720X486, 720X243, 360X243, 180X121, 90X60 |
| **Control** | |
| **Image Compression** | |
| **Algorithm** | Wavelet |
| **Rate** | 10:1 ~200:1 |
| **Performance** | |
| **Transfer Rate** | Max up to 123fps (With 3KB image) |
| **Decoding Rate** | 2 ~ 30fps |
| **Local Compression Rate** | Max 30fps |
| **Security** | Password Based User Authentication |
| | IP-filtering (Secure Mode) |
| | Image Encryption |
| **Alarms and I/O** | Motion detection |
| | Sends e-mail automatically |
| | Sends the image files through FTP automatically |
| | Software-controlled 2 alarm input |
| **MISC . function** | High quality image area setting |
| | Image quality control (10 Levels) |
| | Periodic sending of images through E-Mail, FTP |
| | Gray/Progressive/Single-Shot Mode |
| | User customized home page publishing supported by FTP |
| **Power Supply** | DC 12V, 1.0A via external power supply |

## 2. CCD Camera

| | |
|---|---|
| **Horizontal Resolution** | 450 TV lines |
| **Pick-up Device** | 1/3 inch interline CCD |
| **Scanning System** | 525 lines interlaced (NTSC) |
| | 625 lines interlaced (PAL) |
| **Synchronization** | Internal |
| **Output Signal** | Standard composite signal |

| | |
|---|---|
| | 1 Vpp composite video into 75 ohms |
| **Light sensitivity** | |
| **30 IRE** | 3 Lux(Scene) |
| **Electronic Iris** | 1/60~1/100,000(NTSC) |
| | 1/50~1/100,000(PAL) |
| **Signal to Noise Ratio** | 46dB or more (AGC off) |
| **AGC** | ON (0-15dB Max) |
| **Input Voltage** | 12V DC |
| **Power Consumption** | 2.4A or less |
| **Ambient Temperature** | |
| **Operation** | -10C (14 F) to +55C (131 F) |
| **In storage** | -20C (-4 F) to +70C (158 F) |
| **Relative Humidity** | |
| **Operation** | Under 90% Non-condensing |
| **In storage** | Under 95% Non-condensing |
| **Weight** | 30 g |
| **Standard Lens** | C mount, Aperture: Fixed F1.3 (F1.8) |
| | Focal length: Fixed 8mm (6mm) |

### 3. Network

| | |
|---|---|
| **Browser** | MS Internet Explorer V. 5.0 or later |
| | Netscape V. 4.7 or later |
| | JAVA Applet for non PC User (MAC or Unix) |
| **Connector** | 10 Based-T Ethernet (RJ-45) |
| **Installation** | Assign IP address using setup program or ARP, RARP protocol |
| **Protocols Supported** | TCP/IP, HTTP, ARP, RARP, ICMP, DHCP, FTP, SMTP and PPPoE |
| **S/W Update** | Flash memory allows central remote software updates over the network using FTP or private 'WebEyeUpgrade' |
| **Management** | Configuration is achieved by private setup program And Web server built in administration page. |

### 4. Mechanical

| | |
|---|---|
| **Dimension** | H x W x L = 74mm x 95mm x 185mm |
| **Weight** | 650g(1.43lb), without Power supply |

### 5. Environmental

(*) This data is a target specification.

| | |
|---|---|
| **Temperature *** | |
| **Operating** | -5°C (23 F) ~ +45 °C (113 F), Gradient 15°C/Hr max |
| **Non-Operating** | -20°C (-4 F) ~ +65 °C (149 F), Gradient 15 °C /Hr max |
| **Under Shipment** | -40°C (-40 F) ~ +70 °C (158 F), Gradient 30 °C/Hr max |
| | (Packed in WebGate's original shipping package) |

| | |
|---|---|
| **Humidity *** | |
| **Operating** | 8% ~ 90% R.H. No condensation |
| **Non-Operating** | 8% ~ 90% R.H. No condensation |
| **Under Shipment** | 5% ~ 90% R.H.<br>(Packed in WebGate's original shipping package) |
| **Vibration *** | |
| **Acceleration** | 1.2G |
| **Frequency** | 10Hz ~ 60Hz |
| **Sweep Time** | 1 OCT/Min |
| **Shock *** | 20 G (10msec half sine wave repeated twice maximum/sec) |
| **EMC Adaptability** | EN50082-1: 1992 IEC 801-2: 1991<br>IEC 801-3<br>IEC 801-4<br>EN55022/1994, +A1: 1995, +A2: 1997 Class-A<br>EN61000-3-2: 1995, +A1: 1998, +A2: 1998<br>EN61000-3-3: 1995<br>VCCI<br>FCC Class A |

## 6. Compatible External Devices and Software

| | |
|---|---|
| **PTZ control** | 1 Ch. RS-232, 1Ch. RS-485 (15pin DSUB connector)<br>Multiple PTZ devices are supported via RS-485 |
| **Sensor Input** | 2 auxiliary inputs are supported, made of 'Opto coupler'<br>Opto coupler stands with 3-12V and 10-20mA |
| **Sensor Output** | Solid state relay |

(Appendix 3)

# Frequently Asked Questions

## 1. About WebEye's Feature

- Q: What is WebEye?
  A: The WebEye is a flash memory, and many other features. No other hardware is cameratype server with an integrated Internet server, image compression device, built in CCD, necessary for use. The WebEye connects directly to a network and provides real time images over networks and the Internet. Simply provide power and connect LAN cable to the WebEye.

- Q: What preparations are needed to install?
  A: Provide power and connect network cable. Insert the WebEyeSetup disk, drag the WebEye Setup icon from the pop-up window onto the desktop, double-click the icon.

- Q: Which algorithm is used to compress digital images?
  A: WebEye utilizes the Wavelet image compression device and the Linux operating system. Wavelet and Linux enable WebEye to transfer high quality images faster and with a greater degree of reliability than standard JPEG systems.

- Q: What is the difference between Wavelet algorithm and JPEG in compressing digital images?
  A: Wavelet is more efficient than JPEG by 30-300%. The higher efficiency of Wavelet comes from its encoding method. Wavelet uses the DWT (Discrete Wavelet Transform) algorithm, while JPEG uses DCT (Discrete Cosine Transform). Due to its efficiency, Wavelet will be adopted as the standard in digital image compressing with the introduction of JPEG2000.

  Since Wavelet is not yet standardized, it requires the installation of a Plug-in or Active-Xcontrol for standard Web browsers such as Netscape and IE-Explore. The size of the Plug-in or Active-X control is 3 MB. 3MB needs quite a long time to download, so Wavelet is not widely used. However, Web Gate Inc. has developed a Plug-in/Active-X control of 300KB for faster, more efficient download time.

- Q: Can WebEye support more than one user with different resolutions at the same time?
  A: WebEye can support up to 100 users with different resolutions at the same time.Moreover, WebEye has progressive mode and gray mode to support low speed network line users. A user can monitor full resolution (720 X 486) color images while another user sees half resolution (360 X 243) B/W images.

- Q: What is maximum transmission speed?
  A: WebEye compresses and transmits 30 frames per second (fps) on 10 base-T Network. However this speed is not equal for every user because transmission speed depends on the performance of individual PCs and network bandwidth. 30 fps refers to the user-end or receiving side of the transmission. WebEye can send more than 30 fps total to several users. For example, if 5 users are receiving 10 fps, WebEye is sending 50 fps. When WebEye is connected to a 10 base-T network, it can transmit up to 123 fps of 3KB image files.

- Q: What is maximum number of users to access WebEye at the same time?
  A: The maximum number of simultaneous users is 100. WebEye could support more than 100, but overall transmission speed would be very slow. To ensure the most effective transmission speed, WebEye has been programmed to accept no more than 100 users. When 100 users are logged on to WebEye, the transmission speed is approximately 1 frame per 10 seconds.

- Q: Does WebEye contain Pan/Tilt/Zoom function?
  A: WebEye has pan/tilt/zoom controlling function within its firmware. Pan/tilt devices and zoom lenses can be connected to the DB-15 port in the rear of WebEye. The protocols for several P/T/Z devices are already installed in WebEye. They can be selected from the pull down menu of the "Attached Device" section of the "Serial Port Configuration" menu in the Administrator's homepage. (For more information, refer to pg. 39, "Serial Port Configuration" of the WebEye User's Manual)

- Q: Is there any limitations in setting ID or password?
  A: IDs and passwords can be no longer than nine (9) characters long. The ID/password program is case-sensitive, which means it distinguishes between upper- and lower- case letters. For example "GUEST1" is different from "guest1."

**2. About Installing and Running WebEye.**

- Q: What network line can be used with WebEye?
  A: All network lines (except telephone lines) can be used, although telephone lines may be used through PCs to connect to WebEyes remotely. Network lines such as xDSL, cable modem, and ISDN that use dynamic IP addresses require a different installation process than a dedicated line that has a fixed IP address. (For more information, refer to pg. 33, "Dynamic IP Registration" of the WebEye User's Manual)

- Q: What is the maximum extension range of network lines?
  A: UTP cable that is used for LAN can be extended up to 100 meters without bridging. However, existing UTP cable can be extended up to 240 meters without bridging.

- Q: Can ordinary telephone lines be used for WebEye?
  A: Telephone lines can be used for WebEye, but a telephone modem router must be equipped. Web Gate Inc. will provide a telephone modem router in the near feature, but using telephone lines is not recommended because transmission speed is very low.

- Q: Is a special rack or case needed when WebEye is installed outdoors?
  A: WebEye is not weatherproof. If WebEye is to be used outdoors, it needs to be equipped with a weatherproof case.

- Q: If the network consists of one permanent IP address and several private IP addresses, can WebEye be connected to the network with a private IP address?
  A: WebEye can be assigned a private IP address on a network with a permanent IP address. If the network is a Class C network (255.255.255.XXX), then WebEye may be assigned any available number in the last "room" (represented by XXX). However, since WebEye is a web server, it can be designated as a local server. Any device on a LAN can be designated as the local server through the router. Designating WebEye as the local server will make it easier for people outside the LAN to view real-time images from WebEye.

- Q: If the network consists of only private IP addresses, can WebEye be connected at the network?
  A: WebEye can be connected to LAN having only private IP addresses, but only people on the local network can access WebEye. Networks with narrow bandwidth may not be able to support several WebEyes connected simultaneously.

- Q: If a firewall is on the network, can WebEye be installed and work?
  A: If there is a firewall on the network, port 80 is open for ordinary data communication. However, since WebEye transmits image data, the default port 8080 is also required. Therefore, it is necessary to open port 8080 of the network for remote users to access WebEye. Ports may be configured at the "User Custom Configuration" section of the Administrator's homepage.

  The "Server Push Viewer" enables WebEye to send images through the 80th port. Another method is to change the image transmission port from 8080th port to any port granted by the firewall.

- Q: How can a user see the image sent from WebEye when using Netscape?
  A: If a user wants to use a Netscape browser, the WebEye Plug-in program must be installed. The procedure for the Plug-in setup is below:

  -. Access WebEye using assigned IP address on the Netscape such as http://168.192.1.1/
  -. Setup the WebEye Plug-in using the Netscape Smart Update

  WebEye Plug-in for Netscape is saved on the WebEye itself. When a user connects to WebEye for the first time or has an old version of Plug-in, download the current version by clicking "Download WebEye Plug In Now!"

- Q: How can a user see the images sent from WebEye using Internet Explorer?
  A: If a user wants to see the real-time images of WebEye using Internet Explorer browser, install WebEye Plug-in and Active-X control. The Plug-in is used in the server-push viewer and Active-X control is used in the live image viewer.

If the Active-X control is not installed in your system or is an old version, the installation of Active-X control will occur automatically. Just click "Yes" when the pop-up window appears. Internet Explorer browser 4.0/5.0 or above is recommended.

- Q: What should be done if Active-X Control is installed incorrectly?
  A: If no image appears after the installation of the Active-X Control program, it may be removed and re-installed. To remove Active-X on Windows98 OS, search the (C:\windows\Downloaded Program Files) directory. For Windows NT or 2000, search the (C:\winnt\Downloaded Program Files) directory. If problems still persist after removal and re-installation, contact Web Gate Inc. (www.webgateinc.com) or e-mail: webeye@webgateinc.com

- Q: What should be done if runtime errors of the Plug-in/Active-X control occur?
  A1: If the message box-- "Mismatched Version" appears, do the following:

  Remove and Re-install the Plug-in or Active-X control contained in the WebEye.

  A2: If the message box-- "WebEye client initializing has failed" appears, do the following:

  This message appears because the user's PC does not have Winsock2 library. Winsock2 library for Windows95/98 can be downloaded from public sites. After Winsock2 is downloaded, install it into the system and re-run Web browser.

- Q: Video is not seen in WebEye's homepage. What is the problem?
  A1: If the video from WebEye's inner CCD module does not appear, the problem could be one of two things: "CH 1 (external)" has been designated as the video source and there is no external device connected; or the CCD module has not been activated. If a "Channel Disabled" message appears, check the "Video Channel Selection for CAM#1" setting under "System Configuration" on the Administrator's homepage. The attached cam should be Internal (CH#0). If the channel selection is set at internal (CH#0) but the "Channel Disabled" message still appears, check "Video State Control" under "Video Configuration." The video state control should be "Enabled." If problem persists, contact Web Gate Inc.

  A2: If the videos from external CCD cameras do not appear, the problem could be because external CCD channels are not activated. To activate channels, go to the "Video Configuration" page and select the desired channel. Then press "Enable" at the "Video Channel State Control" line. If the external camera is enabled but images still do not appear, check the BNC connection.

- Q: Which Pan/Tilt/Zoom mechanism can be installed to WebEye?
  A: WebEye already has the protocols for the following Pan/Tilt/Zoom devices: Philips, Pelco (D and P), Sony (EBI-D3x), Surveyor (PT360), Sungjin, Unimo, and Saerim. The administrator may also set command parameters manually. In addition, Web Gate Inc. is in the process of expanding the number of stored protocols for better convenience. For zoom lenses, the E10 cannot be equipped with a zoom lens, but it can support an external camera

with a zoom lens. (For more information, refer to pg. 38, “Pan/Tilt/Zoom Configuration” of the WebEye User’s Manual)

- Q: It is impossible to assign IP address to WebEye with **Ping** command. What is the problem?
  A: If WebEye is connected to a local network, the Ping command can be used to assign an IP address from a local PC or notebook computer. If the Ping command does not work, check the green LED on the back of WebEye. It should blink about once every two seconds. If it does not, check the network line and the LAN port. If the LED blinks normally, check the IP address of the PC. If the IP of the PC is different than the one being assigned to WebEye, the Ping command will not work. For a Class-C network, the first three “rooms” must have the same numbers. The last room identifies individual devices. If the first three rooms of a Class-C network differ between PC and WebEye, then they are not on the same network. (For more detailed information, refer to Appendix 4 in the WebEye User’s Guide.)

- Q: There is some problem accessing WebEye. Sometimes I can access WebEye and sometimes not. How can it be solved?
  A: This problem mostly occurs on Cable Modem, ISDN, and xDSL lines that use modems or routers. The modems or routers will automatically disconnect lines that are not active. Generally, a modem or a router is set to disconnect from a network 3-5 minutes after WebEye stops using lines. ISPs set this condition to prevent their lines from being overloaded with inactive signals. To overcome this problem, set the “Dynamic IP Registration Interval” at approximately one minute. Although this feature is intended for Dynamic IPs, it can also be used here to send active signals to the router and maintain a connection. It is important to set the dynamic IP registration interval shorter than the connection duration of a modem to maintain a continuous connection.

- Q: I can't see the images in WebEye Java Applet view page. I am using Netscape browser on Macintosh computer. What should I do?
  A: Install MRJ (Macintosh Runtime for Java) and MRJ Plugin for Netscape browser. Please, take the following steps for installation.

  1. Go to http://www.apple.com/java/ and download MRJ v2.2.4.
  2. Delete the existing MRJ package's folder ("root/Apple Extras/Mac OS Runtime for Java") if it exists.
  3. Install MRJ package downloaded from step 1. (Refer to the apple's java site for detail information)
  4. Go to http://www.mozilla.org/oji/MRJPlugin.html and download Netscape MRJ Plugin.
  5. Refer to the installation procedure in the mozilla's web site.
  6. Try to see the images in WebEye's Java Applet view page after installing Netscape's MRJ Plugin.

- Q: I can't automatically download Plugin/ActiveX Control for WebEye.
  A: Both the Plugin program and Active-X control are designed to be downloaded and installed automatically. However, situations occasionally arise which prohibit this from happening. If the Netscape browser can't support the SmartUpdate function, the automatic installation after download may fail. For Active-X Control, if Internet Explorer is an earlier version than v4.0 or the registry information of the system is corrupted, the automatic download and installation may fail. If problems occur with automatic download, please try a manual download:
  1. Download the installation program.
  2. Execute the "webcameracontrols.exe" file.

- Q: I can't run the setup program delivered with WebEye Product.
  A: The setup program is an MFC-based windows program. If MFC42.DLL is not installed or is an incompatible version, the setup program may fail to start. If the program shows a message like "...MFC42.DLL...not found...," MFC42.DLL must be installed. The installation procedure is as follows:
  1. Download MFC42.CAB.
  2. Unzip the .cab file into your temporary folder.
  3. Execute the "mfc42.exe".

- Q: From the setup program, when I select one of the WebEyes in the list box and press "Change IP Address" button, the setup program returns a "No Response" message.
  A: The PC may be using the "Obtain an IP address automatically" option in Windows->Control Panel->Network->Local Area Connection->Properties->Internet Protocol->Properties. Use the "Use the following IP address" option. Once the option has been changed, the setup program should work. If not, contact Web Gate Inc.

- Q: About the setup program, when I select one of the WebEyes in the list box and press "Start Configuration" or "Rebooting" button, the setup program returns the "No Response" message.
  A: If the IP address of the WebEye you selected is not in the subnet of your computer, the "No Response" message will appear. Make sure the WebEye's IP address is in the same subnet as the PC by using the "Change IP address" button.

(Appendix 4)

# Utilizing IP Addresses on Local Network

## 1. Introduction

Increasingly, most of our businesses are done via Internet. IP addresses are what we utilize to access to the Internet.

Currently, IP addresses are limited. There are 5 classes' of networks, and each network contains IP addresses. A network can only hold a limited number of IP addresses. The number of IP addresses depends on the network class. The 5 classes are labeled "A" through "E," with the most common one being the "C" class network.

## 2. IP Construction and Network Class

### 1) IP Construction

| xxx | xxx | xxx | xxx |
|---|---|---|---|
| X1 | X2 | X3 | X4 |

(xxx: 0 – 255)
e.g. 192.168.1.1

### 2) Network Class

**A Class**: A network that contains IP addresses from 0 to 127 at room 'X1'.
Network ID: X1
Host ID: X2, X3, X4
There are 128 A-class networks in the world.

**B class**: A network that contains IP addresses from 127 to 191 at room 'X1'.
Network ID: X1, X2
Host ID: X3, X4
There are 65,534 B-class networks in the world.

**C class**: A network that contains IP addresses from 192 to 223 at room 'X1'.
Network ID: X1, X2, X3
Host ID: X4
The most common network in the world; there are 2,097,152 C-class networks in the world.

**D class**: A network that contains IP addresses from 224 to 239 at room 'X1'. D-class networks are used for multicasting, and are not allowed for common use.

**E class**: A network that contains IP addresses from 240 to 225 at room 'X1'. E-class networks are reserved.

### 3. C class Network

#### 1) Features of Addresses

**IP address**: The three digit number in room 'X4' is for the Host ID. The numbers range from 0 to 255. Among the numbers, 0 is used for Network ID, 1 is used for Router IP (Gateway address) and 255 is used for Broadcast address. The numbers from 2 to 244 are IP addresses that can be assigned to WebEye, i-Rec Cam104, PC etc.

**Network ID**: Identifies a network. Generally the first number assigned is Network ID.

**Gateway address**: The IP address of the router for connecting Internet and local network. Remote users can access local network over Internet through the gateway (router). Generally the second number is assigned as Gateway address.

**Broadcast address**: Broadcasts to all devices that are connected on local network. Broadcast address is a destination for broadcasting. All devices connected on local network have the same Broadcast address.

**Subnet Mask**: Divides a local network into two remote networks. Subnet mask shows the IP quantity in a certain network. The numbers that can be used as subnet mask are limited (0, 4, 8, 16, 32, 64, 128)

#### 2) Network configuration

**(1) To use as one network**

Network ID: xxx.xxx.xxx.0
Gateway Address: xxx.xxx.xxx.1
Subnet Mask: 255.255.255.0
Broadcast Address: xxx.xxx.xxx.255
IP Addresses: xxx.xxx.xxx.2 – xxx.xxx.xxx.254

**(2) To use as two sub-networks (1/2 + 1/2)**

Sub-Network ID: xxx.xxx.xxx.0
Gateway Address: xxx.xxx.xxx.1
Subnet Mask: 255.255.255.128
Broadcast Address: xxx.xxx.xxx.127
IP Addresses: xxx.xxx.xxx.2 – xxx.xxx.xxx.126

Sub-Network ID: xxx.xxx.xxx.128
Gateway Address: xxx.xxx.xxx.129
Subnet Mask: 255.255.255.128
Broadcast Address: xxx.xxx.xxx.255
IP Addresses: xxx.xxx.xxx.130 – xxx.xxx.xxx.254

**(3) To use as three sub-networks (1/4 + 1/4 + 1/2)**

Sub-Network ID: xxx.xxx.xxx.0
Gateway Address: xxx.xxx.xxx.1
Subnet Mask: 255.255.255.192
Broadcast Address: xxx.xxx.xxx.63
IP Addresses: xxx.xxx.xxx.2 – xxx.xxx.xxx.62

Sub-Network ID: xxx.xxx.xxx.64
Gateway Address: xxx.xxx.xxx.65
Subnet Mask: 255.255.255.192
Broadcast Address: xxx.xxx.xxx.127
IP Addresses: xxx.xxx.xxx.66 – xxx.xxx.xxx.126

Sub-Network ID: xxx.xxx.xxx.128
Gateway Address: xxx.xxx.xxx.129
Subnet Mask: 255.255.255.128
Broadcast Address: xxx.xxx.xxx.255
IP Addresses: xxx.xxx.xxx.130 – xxx.xxx.xxx.254

**(4) To use as four sub-networks (1/4 + 1/4 + 1/4 + 1/4)**

Sub-Network ID: xxx.xxx.xxx.0
Gateway Address: xxx.xxx.xxx.1
Subnet Mask: 255.255.255.192
Broadcast Address: xxx.xxx.xxx.63
IP Addresses: xxx.xxx.xxx.2 – xxx.xxx.xxx.62

Sub-Network ID: xxx.xxx.xxx.64
Gateway Address: xxx.xxx.xxx.65
Subnet Mask: 255.255.255.192
Broadcast Address: xxx.xxx.xxx.127
IP Addresses: xxx.xxx.xxx.66 – xxx.xxx.xxx.126

Sub-Network ID: xxx.xxx.xxx.128
Gateway Address: xxx.xxx.xxx.129
Subnet Mask: 255.255.255.192
Broadcast Address: xxx.xxx.xxx.191
IP Addresses: xxx.xxx.xxx.130 – xxx.xxx.xxx.190

Sub-Network ID: xxx.xxx.xxx.192
Gateway Address: xxx.xxx.xxx.193
Subnet Mask: 255.255.255.192
Broadcast Address: xxx.xxx.xxx.255
IP Addresses: xxx.xxx.xxx.194 – xxx.xxx.xxx.254

(Appendix 5)

# Upgrading WebEye Firmware

**Warning**

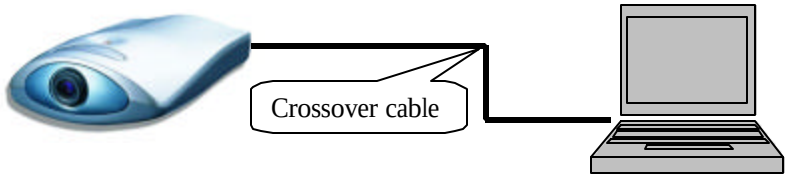
This process is to update WebEye with a new firmware.

Make sure to complete the whole process, since you begin the process. When the process is completed, 'User Image Upgrade is complete' message appears. During the process, do not give physical shock nor disconnect network and power. Otherwise, your WebEye can be damaged seriously, which may result inappropriate operation or operation failure.

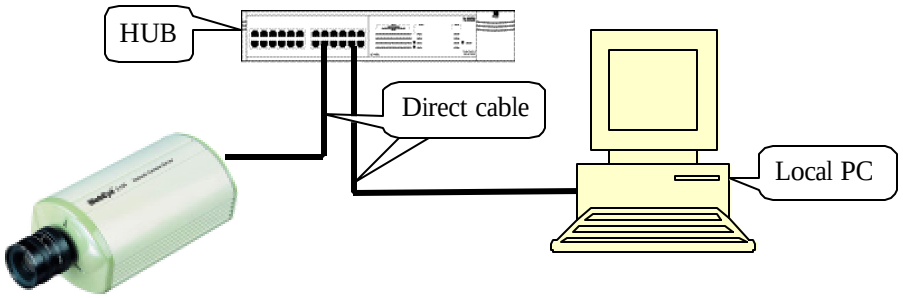
If you failed in upgrading WebEye firmware or WebEye does not operate properly after successful upgrading process, contact WebGate distributor in your area.

**1. Connect WeEye to a PC.**

- Directly connect WebEye to a PC with a crossover cable. This connection is recommended.




- Connect WebEye to a PC through a HUB with a direct cable.




*** This process can also be done on a remote network. However it is not recommended.**

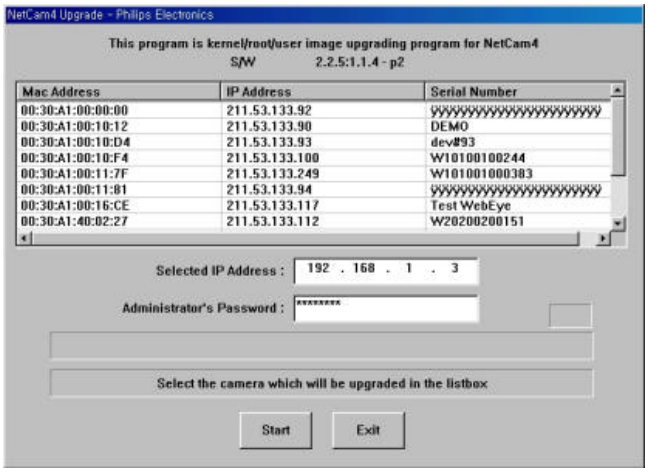
## 2. Upgrade firmware with upgrading program

**(1)** Open 'MS Dos' window and practice a command <c:\arp –d>.

**(2)** Select WebEye to update by clicking on IP address or MAC address in the list.

When an IP address appears in the blanks of "Selected IP address," type in the administrator's password in the "Administ -rator's password" blank.

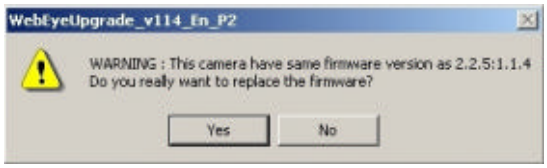
Click "Start" button.



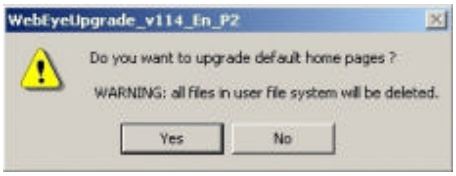

**(3)** Click "Yes" button to confirm upgrading process.

**(4)** Click 'OK' button to start rebooting process.

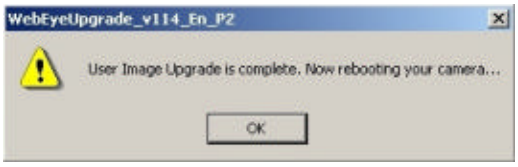
**(5)** If WebEye has a different firmware version, the program will ask if it should be replaced with a new one. Confirm by clicking "Yes."


WebEyeUpgrade_v114_En_P2
WARNING : This camera have same firmware version as 2.2.5:1.1.4
Do you really want to replace the firmware?
Yes
No

**(6)** The program will ask to format user file system. To maintain any changes made to WebEye's homepage, click "No." To format user file system and reload the default settings, click "Yes."


WebEyeUpgrade_v114_En_P2
Do you want to upgrade default home pages ?
WARNING: all files in user file system will be deleted.
Yes
No

**(7)** When upgrade is complete, reboot WebEye by clicking the "Ok" button.




**(8)** To upgrade other WebEyes, repeat the above process. Otherwise, click "Exit."